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THE

WORKS

OF

ADAM SMITH, LL.D.

AND F.R.S. OF LONDON AND EDINBURGH:

ONE OF THE COMMISSIONERS OF HIS MAJESTY'S CUSTOMS IN SCOTLAND;

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WITH AN ACCOUNT OF

HIS LIFE AND WRITINGS

BY DUGALD STEWART,

PROFESSOR OF MORAL PHILOSOPHY IN THE UNIVERSITY, AND FELLOW OF THE ROYAL SOCIETY, OF EDINBURGH, &c. &c. &c.

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Of

CONSIDERATIONS

CONCERNING THE FIRST

FORMATION OF LANGUAGES,

&c. &c.

THE aſſignation of particular names to denote particular objects, that is, the inſtitution of nouns ſubſtantive, would, probably, be one of the firſt ſteps towards the formation of language. Two ſavages, who had never been taught to ſpeak, but had been bred up remote from the ſocieties of men, would naturally begin to form that language by which they would endeavour to make their mutual wants intelligible to each other, by uttering certain ſounds, whenever they meant to denote certain objects. Thoſe objects only which were moſt familiar to them, and which they had moſt frequent occaſion to mention would have particular names aſſigned to them. The particular cave whoſe covering ſheltered them from the weather, the particular tree whoſe fruit relieved their hunger, the particular fountain whoſe

water allayed their thirſt, would firſt be denominated by the words *cave*, *tree*, *fountain*, or by whatever other appellations they might think proper, in that primitive jargon, to mark them. Afterwards, when the more enlarged experience of theſe ſavages had led them to obſerve, and their neceſſary occaſions obliged them to make mention of other caves, and other trees, and other fountains, they would naturally beſtow, upon each of thoſe new objects, the ſame name, by which they had been accuſtomed to expreſs the ſimilar object they were firſt acquainted with. The new objects had none of them any name of its own, but each of them exactly reſembled another object, which had ſuch an appellation. It was impoſſible that thoſe ſavages could behold the new objects, without recollecting the old ones; and the name of the old ones, to which the new bore ſo cloſe a reſemblance. When they had occaſion, therefore, to mention, or to point out to each other, any of the new objects, they would naturally utter the name of the correſpondent old one, of which the idea could not fail, at that inſtant, to preſent itſelf to their memory in the ſtrongeſt and livelieſt manner. And thus, thoſe words, which were originally the proper names of individuals, would each of them inſenſibly become the common name of a multitude. A child that is juſt learning

to

to ſpeak, calls every perſon who comes to the houſe its papa or its mama; and thus beſtows upon the whole ſpecies thoſe names which it had been taught to apply to two individuals. I have known a clown, who did not know the proper name of the river which ran by his own door. It was *the river*, he ſaid, and he never heard any other name for it. His experience, it ſeems, had not led him to obſerve any other river. The general word *river*, therefore, was, it is evident, in his acceptance of it, a proper name, ſignifying an individual object. If this perſon had been carried to another river, would he not readily have called it a river? Could we ſuppoſe any perſon living on the banks of the Thames ſo ignorant, as not to know the general word *river*, but to be acquainted only with the particular word *Thames*, if he was brought to any other river, would he not readily call it *a Thames?* This, in reality, is no more than what they, who are well acquainted with the general word, are very apt to do. An Engliſhman, deſcribing any great river which he may have ſeen in ſome foreign country, naturally ſays, that it is another Thames. The Spaniards, when they firſt arrived upon the coaſt of Mexico, and obſerved the wealth, populouſneſs, and habitations of that fine country, ſo much ſuperior to the ſavage nations which they had been viſiting for ſome

time before, cried out, that it was another Spain. Hence it was called New Spain; and this name has ſtuck to that unfortunate country ever ſince. We ſay, in the ſame manner, of a hero, that he is an Alexander; of an orator, that he is a Cicero; of a philoſopher, that he is a Newton. This way of ſpeaking, which the grammarians call an Antonomaſia, and which is ſtill extremely common, though now not at all neceſſary, demonſtrates how much mankind are naturally diſpoſed to give to one object the name of any other, which nearly reſembles it, and thus to denominate a multitude, by what originally was intended to expreſs an individual.

It is this application of the name of an individual to a great multitude of objects, whoſe reſemblance naturally recalls the idea of that individual, and of the name which expreſſes it, that ſeems originally to have given occaſion to the formation of thoſe claſſes and aſſortments, which, in the ſchools, are called genera and ſpecies, and of which the ingenious and eloquent M. Rouſſeau of Geneva * finds himſelf ſo much at a loſs to account for the origin. What conſtitutes a ſpecies is merely a number of objects, bearing a certain degree of reſemblance to one ano-

* Origine de l'Inegalité. Partie Premiere, p. 376, 377. Edition d'Amſterdam des Oeuvres diverſes de J. J. Rouſſeau.

ther,

ther, and on that account denominated by a ſingle appellation, which may be applied to expreſs any one of them.

When the greater part of objects had thus been arranged under their proper claſſes and aſſortments, diſtinguiſhed by ſuch general names, it was impoſſible that the greater part of that almoſt infinite number of individuals, comprehended under each particular aſſortment or ſpecies, could have any peculiar or proper names of their own, diſtinct from the general name of the ſpecies. When there was occaſion, therefore, to mention any particular object, it often became neceſſary to diſtinguiſh it from the other objects comprehended under the ſame general name, either, firſt, by its peculiar qualities; or, ſecondly, by the peculiar relation which it ſtood in to ſome other things. Hence the neceſſary origin of two other ſets of words, of which the one ſhould expreſs quality; the other, relation.

Nouns adjective are the words which expreſs quality conſidered as qualifying, or, as the ſchoolmen ſay, in concrete with, ſome particular ſubject. Thus the word *green* expreſſes a certain quality conſidered as qualifying, or as in concrete with, the particular ſubject to which it may be applied. Words of this kind, it is evident, may ſerve to diſtinguiſh particular objects from others comprehended under the ſame general appellation.

The words *green tree*, for example, might ſerve to diſtinguiſh a particular tree from others that were withered or blaſted.

Prepoſitions are the words which expreſs relation conſidered, in the ſame manner, in concrete with the co-relative object. Thus the prepoſitions *of*, *to*, *for*, *with*, *by*, *above*, *below*, &c. denote ſome relation ſubſiſting between the objects expreſſed by the words between which the propoſitions are placed; and they denote that this relation is conſidered in concrete with the co-relative object. Words of this kind ſerve to diſtinguiſh particular objects from others of the ſame ſpecies, when thoſe particular objects cannot be ſo properly marked out by any peculiar qualities of their own. When we ſay, *the green tree of the meadow*, for example, we diſtinguiſh a particular tree, not only by the quality which belongs to it, but by the relation which it ſtands in to another object.

As neither quality nor relation can exiſt in abſtract, it is natural to ſuppoſe that the words which denote them conſidered in concrete, the way in which we always ſee them ſubſiſt, would be of much earlier invention than thoſe which expreſs them conſidered in abſtract, the way in which we never ſee them ſubſiſt. The words *green* and *blue* would, in all probability, be ſooner invented than the words *greenneſs* and *blueneſs*; the words *above* and

and *below*, than the words *ſuperiority* and *inferiority*. To invent words of the latter kind requires a much greater effort of abſtraction than to invent thoſe of the former. It is probable, therefore, that ſuch abſtract terms would be of much later inſtitution. Accordingly, their etymologies generally ſhew that they are ſo, they being generally derived from others that are concrete.

But though the invention of nouns adjective be much more natural than that of the abſtract nouns ſubſtantive derived from them, it would ſtill, however, require a conſiderable degree of abſtraction and generalization. Thoſe, for example, who firſt invented the words *green*, *blue*, *red*, and the other names of colours, muſt have obſerved and compared together a great number of objects, muſt have remarked their reſemblances and diſſimilitudes in reſpect of the quality of colour, and muſt have arranged them, in their own minds, into different claſſes and aſſortments, according to thoſe reſemblances and diſſimilitudes. An adjective is by nature a general, and in ſome meaſure an abſtract word, and neceſſarily pre-ſuppoſes the idea of a certain ſpecies or aſſortment of things, to all of which it is equally applicable. The word *green* could not, as we were ſuppoſing might be the caſe of the word *cave*, have been originally the name of an individual, and afterwards have become, by what grammarians call an Antonomaſia, the

the name of a ſpecies. The word *green* denoting, not the name of a ſubſtance, but the peculiar quality of a ſubſtance, muſt from the very firſt have been a general word, and conſidered as equally applicable to any other ſubſtance poſſeſſed of the ſame quality. The man who firſt diſtinguiſhed a particular object by the epithet of *green*, muſt have obſerved other objects that were not *green*, from which he meant to ſeparate it by this appellation. The inſtitution of this name, therefore, ſuppoſes compariſon. It likewiſe ſuppoſes ſome degree of abſtraction. The perſon who firſt invented this appellation muſt have diſtinguiſhed the quality from the object to which it belonged, and muſt have conceived the object as capable of ſubſiſting without the quality. The invention, therefore, even of the ſimpleſt nouns adjective, muſt have required more metaphyſics than we are apt to be aware of. The different mental operations, of arrangement or claſſing, of compariſon, and of abſtraction, muſt all have been employed, before even the names of the different colours, the leaſt metaphyſical of all nouns adjective, could be inſtituted. From all which I infer, that when languages were beginning to be formed, nouns adjective would by no means be the words of the earlieſt invention.

There is another expedient for denoting the different qualities of different ſubſtances, which as it requires no abſtraction, nor any conceived

conceived ſeparation of the quality from the ſubject, ſeems more natural than the invention of nouns adjective, and which, upon this account, could hardly fail, in the firſt formation of language, to be thought of before them. This expedient is to make ſome variation upon the noun ſubſtantive itſelf, according to the different qualities which it is endowed with. Thus, in many languages, the qualities both of ſex and of the want of ſex, are expreſſed by different terminations in the nouns ſubſtantive, which denote objects ſo qualified. In Latin, for example, *lupus*, *lupa*; *equus*, *equa*; *juvencus*, *juvenca*; *Julius*, *Julia*; *Lucretius*, *Lucretia*, &c. denote the qualities of male and female in the animals and perſons to whom ſuch appellations belong, without needing the addition of any adjective for this purpoſe. On the other hand, the words *forum*, *pratum*, *plauſtrum*, denote by their peculiar termination the total abſence of ſex in the different ſubſtances which they ſtand for. Both ſex, and the want of all ſex, being naturally conſidered as qualities modifying and inſeparable from the particular ſubſtances to which they belong, it was natural to expreſs them rather by a modification in the noun ſubſtantive, than by any general and abſtract word expreſſive of this particular ſpecies of quality. The expreſſion bears, it is evident, in this way, a much more exact analogy to the idea or object which it denotes, than in the other. The

quality appears, in nature, as a modification of the ſubſtance, and as it is thus expreſſed in language, by a modification of the noun ſubſtantive, which denotes that ſubſtance, the quality and the ſubject are, in this caſe, blended together, if I may ſay ſo, in the expreſſion, in the ſame manner as they appear to be in the object and in the idea. Hence the origin of the maſculine, feminine, and neutral genders, in all the ancient languages. By means of theſe, the moſt important of all diſtinctions, that of ſubſtances into animated and inanimated, and that of animals into male and female, ſeem to have been ſufficiently marked without the aſſiſtance of adjectives, or of any general names denoting this moſt extenſive ſpecies of qualifications.

There are no more than theſe three genders in any of the languages with which I am acquainted; that is to ſay, the formation of nouns ſubſtantive can, by itſelf, and without the accompaniment of adjectives, expreſs no other qualities but thoſe three above mentioned, the qualities of male, of female, of neither male nor female. I ſhould not, however, be ſurpriſed, if, in other languages with which I am unacquainted, the different formations of nouns ſubſtantive ſhould be capable of expreſſing many other different qualities. The different diminutives of the Italian, and of ſome other languages, do, in reality, ſometimes, expreſs a great variety of different modifi-

modifications in the ſubſtances denoted by thoſe nouns which undergo ſuch variations.

It was impoſſible, however, that nouns ſubſtantive could, without loſing altogether their original form, undergo ſo great a number of variations, as would be ſufficient to expreſs that almoſt infinite variety of qualities, by which it might, upon different occaſions, be neceſſary to ſpecify and diſtinguiſh them. Though the different formation of nouns ſubſtantive, therefore, might, for ſome time, foreſtall the neceſſity of inventing nouns adjective, it was impoſſible that this neceſſity could be foreſtalled altogether. When nouns adjective came to be invented, it was natural that they ſhould be formed with ſome ſimilarity to the ſubſtantives, to which they were to ſerve as epithets or qualifications. Men would naturally give them the ſame terminations with the ſubſtantives to which they were firſt applied, and from that love of ſimilarity of ſound, from that delight in the returns of the ſame ſyllables, which is the foundation of analogy in all languages, they would be apt to vary the termination of the ſame adjective, according as they had occaſion to apply it to a maſculine, to a feminine, or to a neutral ſubſtantive. They would ſay, *magnus lupus*, *magna lupa*, *magnum pratum*, when they meant to expreſs a great *he wolf*, a great *ſhe wolf*, a great *meadow*,

This

This variation, in the termination of the noun adjective, according to the gender of the ſubſtantive, which takes place in all the ancient languages, ſeems to have been introduced chiefly for the ſake of a certain ſimilarity of ſound, of a certain ſpecies of rhyme, which is naturally ſo very agreeable to the human ear. Gender, it is to be obſerved, cannot properly belong to a noun adjective, the ſignification of which is always preciſely the ſame, to whatever ſpecies of ſubſtantives it is applied. When we ſay, *a great man*, *a great woman*, the word *great* has preciſely the ſame meaning in both caſes, and the difference of the ſex in the ſubjects to which it may be applied, makes no ſort of difference in its ſignification. *Magnus*, *magna*, *magnum*, in the ſame manner, are words which expreſs preciſely the ſame quality, and the change of the termination is accompanied with no ſort of variation in the meaning. Sex and gender are qualities which belong to ſubſtances, but cannot belong to the qualities of ſubſtances. In general, no quality, when conſidered in concrete, or as qualifying ſome particular ſubject, can itſelf be conceived as the ſubject of any other quality; though when conſidered in abſtract it may. No adjective therefore can qualify any other adjective. A *great good man*, means a man who is both *great* and *good*. Both the adjectives qualify the ſub-

ſtantive; they do not qualify one another. On the other hand, when we ſay, the *great goodneſs* of the man, the word *goodneſs* denoting a quality conſidered in abſtract, which may itſelf be the ſubject of other qualities, is upon that account capable of being qualified by the word *great*.

If the original invention of nouns adjective would be attended with ſo much difficulty, that of prepoſitions would be accompanied with yet more. Every prepoſition, as I have already obſerved, denotes ſome relation conſidered in concrete with the co-relative object. The prepoſition *above*, for example, denotes the relation of ſuperiority, not in abſtract, as it is expreſſed by the word *ſuperiority*, but in concrete with ſome co-relative object. In this phraſe, for example, *the tree above the cave*, the word *above* expreſſes a certain relation between the *tree* and the *cave*, and it expreſſes this relation in concrete with the co-relative object, *the cave*. A prepoſition always requires, in order to complete the ſenſe, ſome other word to come after it; as may be obſerved in this particular inſtance. Now, I ſay, the original invention of ſuch words would require a yet greater effort of abſtraction and generalization, than that of nouns adjective. Firſt of all, the relation is, in itſelf, a more metaphyſical object than a quality. Nobody can be at a loſs to explain

what

what is meant by a quality; but few people will find themſelves able to expreſs, very diſtinctly, what is underſtood by a relation. Qualities are almoſt always the objects of our external ſenſes; relations never are. No wonder, therefore, that the one ſet of objects ſhould be ſo much more comprehenſible than the other. Secondly, though prepoſitions always expreſs the relation which they ſtand for, in concrete with the co-relative object, they could not have originally been formed without a conſiderable effort of abſtraction. A prepoſition denotes a relation, and nothing but a relation. But before men could inſtitute a word, which ſignified a relation, and nothing but a relation, they muſt have been able, in ſome meaſure, to conſider this relation abſtractedly from the related objects; ſince the idea of thoſe objects does not, in any reſpect, enter into the ſignification of the prepoſition. The invention of ſuch a word, therefore, muſt have required a conſiderable degree of abſtraction. Thirdly, a prepoſition is from its nature a general word, which, from its very firſt inſtitution, muſt have been conſidered as equally applicable to denote any other ſimilar relation. The man who firſt invented the word *above*, muſt not only have diſtinguiſhed, in ſome meaſure, the relation of *ſuperiority* from the objects which were ſo related, but he muſt alſo have diſtinguiſhed this relation from other relations,

relations, ſuch as, from the relation of *inferiority* denoted by the word *below*, from the relation of *juxta-poſition*, expreſſed by the word *beſide*, and the like. He muſt have conceived this word, therefore, as expreſſive of a particular ſort or ſpecies of relation diſtinct from every other, which could not be done without a conſiderable effort of compariſon and generalization.

Whatever were the difficulties, therefore, which embarraſſed the firſt invention of nouns adjective, the ſame, and many more, muſt have embarraſſed that of prepoſitions. If mankind, therefore, in the firſt formation of languages, ſeem to have, for ſome time, evaded the neceſſity of nouns adjective, by varying the termination of the names of ſubſtances, according as theſe varied in ſome of their moſt important qualities, they would much more find themſelves under the neceſſity of evading, by ſome ſimilar contrivance, the yet more difficult invention of prepoſitions. The different caſes in the ancient languages is a contrivance of preciſely the ſame kind. The genitive and dative caſes, in Greek and Latin, evidently ſupply the place of the prepoſitions; and by a variation in the noun ſubſtantive, which ſtands for the co-relative term, expreſs the relation which ſubſiſts between what is denoted by that noun ſubſtantive, and what is expreſſed by ſome other word in the ſentence. In theſe

expreſſions, for example, *fructus arboris*, *the fruit of the tree*; *ſacer Herculi*, *ſacred to Hercules*; the variations made in the co-relative words, *arbor* and *Hercules*, expreſs the ſame relations which are expreſſed in Engliſh by the prepoſitions *of* and *to*.

To expreſs a relation in this manner, did not require any effort of abſtraction. It was not here expreſſed by a peculiar word denoting relation and nothing but relation, but by a variation upon the co-relative term. It was expreſſed here, as it appears in nature, not as ſomething ſeparated and detached, but as thoroughly mixed and blended with the co-relative object.

To expreſs relation in this manner, did not require any effort of generalization. The words *arboris* and *Herculi*, while they involve in their ſignification the ſame relation expreſſed by the Engliſh prepoſitions *of* and *to*, are not, like thoſe prepoſitions, general words, which can be applied to expreſs the ſame relation between whatever other objects it might be obſerved to ſubſiſt.

To expreſs relation in this manner did not require any effort of compariſon. The words *arboris* and *Herculi* are not general words intended to denote a particular ſpecies of relations which the inventors of thoſe expreſſions meant, in conſequence of ſome ſort of compariſon, to ſeparate and diſtinguiſh from every other

other ſort of relation. The example, indeed, of this contrivance would ſoon probably be followed, and whoever had occaſion to expreſs a ſimilar relation between any other objects would be very apt to do it by making a ſimilar variation on the name of the co-relative object. This, I ſay, would probably, or rather certainly happen; but it would happen without any intention or foreſight in thoſe who firſt ſet the example, and who never meant to eſtabliſh any general rule. The general rule would eſtabliſh itſelf inſenſibly, and by ſlow degrees, in conſequence of that love of analogy and ſimilarity of ſound, which is the foundation of by far the greater part of the rules of grammar.

To expreſs relation, therefore, by a variation in the name of the co-relative object, requiring neither abſtraction, nor generalization, nor compariſon of any kind, would, at firſt, be much more natural and eaſy, than to expreſs it by thoſe general words called prepoſitions, of which the firſt invention muſt have demanded ſome degree of all thoſe operations.

The number of caſes is different in different languages. There are five in the Greek, ſix in the Latin, and there are ſaid to be ten in the Armenian language. It muſt have naturally happened that there ſhould be a greater or a ſmaller number of caſes, according as in the terminations of nouns ſubſtantive the firſt formers of any language happened to

have eſtabliſhed a greater or a ſmaller number of variations, in order to expreſs the different relations they had occaſion to take notice of, before the invention of thoſe more general and abſtract prepoſitions which could ſupply their place.

It is, perhaps, worth while to obſerve that thoſe prepoſitions, which in modern languages hold the place of the ancient caſes, are, of all others, the moſt general, and abſtract, and metaphyſical; and of conſequence, would probably be the laſt invented. Aſk any man of common acuteneſs, What relation is expreſſed by the prepoſition *above?* He will readily anſwer, that of *ſuperiority*. By the prepoſition *below?* He will as quickly reply, that of *inferiority*. But aſk him, what relation is expreſſed by the prepoſition *of*, and, if he has not beforehand employed his thoughts a good deal upon theſe ſubjects, you may ſafely allow him a week to conſider of his anſwer. The prepoſitions *above* and *below* do not denote any of the relations expreſſed by the caſes in the ancient languages. But the prepoſition *of*, denotes the ſame relation, which is in them expreſſed by the genitive caſe; and which, it is eaſy to obſerve, is of a very metaphyſical nature. The prepoſition *of*, denotes relation in general, conſidered in concrete with the co-relative object. It marks that the noun ſubſtantive which goes before it, is ſomehow or other related to that which comes after it, but without in any re-

ſpect

ſpect aſcertaining, as is done by the prepoſition *above*, what is the peculiar nature of that relation. We often apply it, therefore, to expreſs the moſt oppoſite relations; becauſe, the moſt oppoſite relations agree ſo far that each of them comprehends in it the general idea or nature of a relation. We ſay, *the father of the ſon*, and *the ſon of the father; the fir-trees of the foreſt*, and the *foreſt of the fir-trees*. The relation in which the father ſtands to the ſon, is, it is evident, a quite oppoſite relation to that in which the ſon ſtands to the father; that in which the parts ſtand to the whole, is quite oppoſite to that in which the whole ſtands to the parts. The word *of*, however, ſerves very well to denote all thoſe relations, becauſe in itſelf it denotes no particular relation, but only relation in general; and ſo far as any particular relation is collected from ſuch expreſſions, it is inferred by the mind, not from the prepoſition itſelf, but from the nature and arrangement of the ſubſtantives, between which the prepoſition is placed.

What I have ſaid concerning the prepoſition *of*, may in ſome meaſure be applied to the prepoſitions *to*, *for*, *with*, *by*, and to whatever other prepoſitions are made uſe of in modern languages, to ſupply the place of the ancient caſes. They all of them expreſs very abſtract and metaphyſical rela-

tions, which any man, who takes the trouble to try it, will find it extremely difficult to expreſs by nouns ſubſtantive, in the ſame manner as we may expreſs the relation denoted by the prepoſition *above*, by the noun ſubſtantive *ſuperiority*. They all of them, however, expreſs ſome ſpecific relation, and are, conſequently, none of them ſo abſtract as the prepoſition *of*, which may be regarded as by far the moſt metaphyſical of all prepoſitions. The prepoſitions, therefore, which are capable of ſupplying the place of the ancient caſes, being more abſtract than the other prepoſitions, would naturally be of more difficult invention. The relations at the ſame time which thoſe prepoſitions expreſs, are, of all others, thoſe which we have moſt frequent occaſion to mention. The prepoſitions *above*, *below*, *near*, *within*, *without*, *againſt*, &c. are much more rarely made uſe of, in modern languages, than the prepoſitions *of*, *to*, *for*, *with*, *from*, *by*. A prepoſition of the former kind will not occur twice in a page; we can ſcarce compoſe a ſingle ſentence without the aſſiſtance of one or two of the latter. If theſe latter prepoſitions, therefore, which ſupply the place of the caſes, would be of ſuch difficult invention on account of their abſtractedneſs, ſome expedient, to ſupply their place, muſt have been of indiſpenſable neceſſity, on account of the frequent

frequent occaſion which men have to take notice of the relations which they denote. But there is no expedient ſo obvious, as that of varying the termination of one of the principal words.

It is, perhaps, unneceſſary to obſerve, that there are ſome of the caſes in the ancient languages, which, for particular reaſons, cannot be repreſented by any prepoſitions. Theſe are the nominative, accuſative, and vocative caſes. In thoſe modern languages, which do not admit of any ſuch variety in the terminations of their nouns ſubſtantive, the correſpondent relations are expreſſed by the place of the words, and by the order and conſtruction of the ſentence.

As men have frequently occaſion to make mention of multitudes as well as of ſingle objects, it became neceſſary that they ſhould have ſome method of expreſſing number. Number may be expreſſed either by a particular word, expreſſing number in general, ſuch as the words *many*, *more*, &c. or by ſome variation upon the words which expreſs the things numbered. It is this laſt expedient which mankind would probably have recourſe to, in the infancy of language. Number, conſidered in general, without relation to any particular ſet of objects numbered, is one of the moſt abſtract and metaphyſical ideas, which the mind of man is capable of forming;

and, conſequently, is not an idea, which would readily occur to rude mortals, who were juſt beginning to form a language. They would naturally, therefore, diſtinguiſh when they talked of a ſingle, and when they talked of a multitude of objects, not by any metaphyſical adjectives, ſuch as the Engliſh *a*, *an*, *many*, but by a variation upon the termination of the word which ſignified the objects numbered. Hence the origin of the ſingular and plural numbers, in all the ancient languages; and the ſame diſtinction has likewiſe been retained in all the modern languages, at leaſt, in the greater part of words.

All primitive and uncompounded languages ſeem to have a dual, as well as a plural number. This is the caſe of the Greek, and I am told of the Hebrew, of the Gothic, and of many other languages. In the rude beginnings of ſociety, *one*, *two*, and *more*, might poſſibly be all the numeral diſtinctions which mankind would have any occaſion to take notice of. Theſe they would find it more natural to expreſs, by a variation upon every particular noun ſubſtantive, than by ſuch general and abſtract words as *one*, *two*, *three*, *four*, &c. Theſe words, though cuſtom has rendered them familiar to us, expreſs, perhaps, the moſt ſubtile and refined abſtractions, which the mind of man is capable of forming. Let any one conſider within himſelf,

himſelf, for example, what he means by the word *three*, which ſignifies neither three ſhillings, nor three pence, nor three men, nor three horſes, but three in general; and he will eaſily ſatisfy himſelf that a word, which denotes ſo very metaphyſical an abſtraction, could not be either a very obvious or a very early invention. I have read of ſome ſavage nations, whoſe language was capable of expreſſing no more than the three firſt numeral diſtinctions. But whether it expreſſed thoſe diſtinctions by three general words, or by variations upon the nouns ſubſtantive, denoting the things numbered, I do not remember to have met with any thing which could determine.

As all the ſame relations which ſubſiſt between ſingle, may likewiſe ſubſiſt between numerous objects, it is evident there would be occaſion for the ſame number of caſes in the dual and in the plural, as in the ſingular number. Hence the intricacy and complexneſs of the declenſions in all the ancient languages. In the Greek there are five caſes in each of the three numbers, conſequently fifteen in all.

As nouns adjective, in the ancient languages, varied their terminations according to the gender of the ſubſtantive to which they were applied, ſo did they likewiſe, according to the caſe and the number.

Every

Every noun adjective in the Greek language, therefore, having three genders, and three numbers, and five cases in each number, may be considered as having five and forty different variations. The first formers of language seem to have varied the termination of the adjective, according to the case and the number of the substantive, for the same reason which made them vary it according to the gender; the love of analogy, and of a certain regularity of sound. In the signification of adjectives there is neither case nor number, and the meaning of such words is always precisely the same, notwithstanding all the variety of termination under which they appear. *Magnus vir*, *magni viri*, *magnorum virorum; a great man, of a great man, of great men;* in all these expressions the words, *magnus*, *magni*, *magnorum*, as well as the word *great*, have precisely one and the same signification, though the substantives to which they are applied have not. The difference of termination in the noun adjective is accompanied with no sort of difference in the meaning. An adjective denotes the qualification of a noun substantive. But the different relations in which that noun substantive may occasionally stand, can make no sort of difference upon its qualification.

If the declensions of the ancient languages are so very complex, their conjugations are infinitely

infinitely more ſo. And the complexneſs of the one is founded upon the ſame principle with that of the other, the difficulty of forming, in the beginnings of language, abſtract and general terms.

Verbs muſt neceſſarily have been coëval with the very firſt attempts towards the formation of language. No affirmation can be expreſſed without the aſſiſtance of ſome verb. We never ſpeak but in order to expreſs our opinion that ſomething either is or is not. But the word denoting this event, or this matter of fact, which is the ſubject of our affirmation, muſt always be a verb.

Imperſonal verbs, which expreſs in one word a complete event, which preſerve in the expreſſion that perfect ſimplicity and unity, which there always is in the object and in the idea, and which ſuppoſe no abſtraction, or metaphyſical diviſion of the event into its ſeveral conſtituent members of ſubject and attribute, would, in all probability, be the ſpecies of verbs firſt invented. The verbs *pluit, it rains; ningit, it ſnows; tonat, it thunders; lucet, it is day; turbatur, there is a confuſion*, &c. each of them expreſs a complete affirmation, the whole of an event, with that perfect ſimplicity and unity with which the mind conceives it in nature. On the contrary, the phraſes, *Alexander ambulat, Alexander walks; Petrus ſedet, Peter ſits,*

divide

divide the event, as it were, into two parts, the perſon or ſubject, and the attribute, or matter of fact, affirmed of that ſubject. But in nature, the idea or conception of Alexander walking, is as perfectly and completely one ſimple conception, as that of Alexander not walking. The diviſion of this event, therefore, into two parts, is altogether artificial, and is the effect of the imperfection of language, which, upon this, as upon many other occaſions, ſupplies, by a number of words, the want of one, which could expreſs at once the whole matter of fact that was meant to be affirmed. Every body muſt obſerve how much more ſimplicity there is in the natural expreſſion, *pluit*, than in the more artificial expreſſions, *imber decidit*, *the rain falls*; or *tempeſtas eſt pluvia*, *the weather is rainy*. In theſe two laſt expreſſions, the ſimple event, or matter of fact, is artificially ſplit and divided in the one, into two; in the other, into three parts. In each of them it is expreſſed by a ſort of grammatical circumlocution, of which the ſignificancy is founded upon a certain metaphyſical analyſis of the component parts of the idea expreſſed by the word *pluit*. The firſt verbs, therefore, perhaps even the firſt words, made uſe of in the beginnings of language, would in all probability be ſuch imperſonal verbs. It is obſerved accordingly, I am told, by the Hebrew

Hebrew grammarians, that the radical words of their language, from which all the others are derived, are all of them verbs, and impersonal verbs.

It is easy to conceive how, in the progress of language, those impersonal verbs should become personal. Let us suppose, for example, that the word *venit, it comes*, was originally an impersonal verb, and that it denoted, not the coming of something in general, as at present, but the coming of a particular object, such as *the Lion*. The first savage inventors of language, we shall suppose, when they observed the approach of this terrible animal, were accustomed to cry out to one another, *venit*, that is, *the lion comes*; and that this word thus expressed a complete event, without the assistance of any other. Afterwards, when, on the further progress of language, they had begun to give names to particular substances, whenever they observed the approach of any other terrible object, they would naturally join the name of that object to the word *venit*, and cry out, *venit ursus, venit lupus*. By degrees the word *venit* would thus come to signify the coming of any terrible object, and not merely the coming of the lion. It would now, therefore, express, not the coming of a particular object, but the coming of an object of a particular kind. Having become more general in its significa-

tion,

tion, it could no longer repreſent any particular diſtinct event by itſelf, and without the aſſiſtance of a noun ſubſtantive, which might ſerve to aſcertain and determine its ſignification. It would now, therefore, have become a perſonal, inſtead of an imperſonal verb. We may eaſily conceive how, in the further progreſs of ſociety, it might ſtill grow more general in its ſignification, and come to ſignify, as at preſent, the approach of any thing whatever, whether good, bad, or indifferent.

It is probably in ſome ſuch manner as this, that almoſt all verbs have become perſonal, and that mankind have learned by degrees to ſplit and divide almoſt every event into a great number of metaphyſical parts, expreſſed by the different parts of ſpeech, variouſly combined in the different members of every phraſe and ſentence *. The ſame ſort of progreſs ſeems to have been made in the art of ſpeaking as in the art of writing. When mankind firſt began to attempt to expreſs

* As the far greater part of verbs expreſs, at preſent, not an event, but the attribute of an event, and, conſequently, require a ſubject, or nominative caſe, to complete their ſignification, ſome grammarians, not having attended to this progreſs of nature, and being deſirous to make their common rules quite univerſal, and without any exception, have inſiſted that all verbs required a nominative, either expreſſed or underſtood; and have, accordingly, put themſelves to the torture to find ſome awkward nominatives to thoſe few verbs which ſtill expreſſing a complete event, plainly admit of none. *Pluit*, for example, according to *Sanctius*, means *pluvia pluit*, in Engliſh, *the rain rains*. See Sanctii Minerva, l. 3. c. 1.

their

their ideas by writing, every character repreſented a whole word. But the number of words being almoſt infinite, the memory found itſelf quite loaded and oppreſſed by the multitude of characters which it was obliged to retain. Neceſſity taught them, therefore, to divide words into their elements, and to invent characters which ſhould repreſent, not the words themſelves, but the elements of which they were compoſed. In conſequence of this invention, every particular word came to be repreſented, not by one character, but by a multitude of characters; and the expreſſion of it in writing became much more intricate and complex than before. But though particular words were thus repreſented by a greater number of characters, the whole language was expreſſed by a much ſmaller, and about four and twenty letters were found capable of ſupplying the place of that immenſe multitude of characters, which were requiſite before. In the ſame manner, in the beginnings of language, men ſeem to have attempted to expreſs every particular event, which they had occaſion to take notice of, by a particular word, which expreſſed at once the whole of that event. But as the number of words muſt, in this caſe, have become really infinite, in conſequence of the really infinite variety of events, men found themſelves partly compelled by neceſſity, and partly conducted by nature, to

divide every event into what may be called its metaphyſical elements, and to inſtitute words, which ſhould denote not ſo much the events, as the elements of which they were compoſed. The expreſſion of every particular event, became in this manner more intricate and complex, but the whole ſyſtem of the language became more coherent, more connected, more eaſily retained and comprehended.

When verbs, from being originally imperſonal, had thus, by the diviſion of the event into its metaphyſical elements, become perſonal, it is natural to ſuppoſe that they would firſt be made uſe of in the third perſon ſingular. No verb is ever uſed imperſonally in our language, nor, ſo far as I know, in any other modern tongue. But in the ancient languages, whenever any verb is uſed imperſonally, it is always in the third perſon ſingular. The termination of thoſe verbs, which are ſtill always imperſonal, is conſtantly the ſame with that of the third perſon ſingular of perſonal verbs. The conſideration of theſe circumſtances, joined to the naturalneſs of the thing itſelf, may ſerve to convince us that verbs firſt became perſonal in what is now called the third perſon ſingular.

But as the event, or matter of fact, which is expreſſed by a verb, may be affirmed either of the perſon who ſpeaks, or of the perſon who is ſpoken to, as well as of ſome third perſon or object,

object, it became neceſſary to fall upon ſome method of expreſſing theſe two peculiar relations of the event. In the Engliſh language this is commonly done, by prefixing, what are called the perſonal pronouns, to the general word which expreſſes the event affirmed. *I came*, *you came*, *he* or *it came*; in theſe phraſes the event of having come is, in the firſt, affirmed of the ſpeaker; in the ſecond, of the perſon ſpoken to; in the third, of ſome other perſon, or object. The firſt formers of language, it may be imagined, might have done the ſame thing, and prefixing in the ſame manner the two firſt perſonal pronouns, to the ſame termination of the verb, which expreſſed the third perſon ſingular, might have ſaid *ego venit*, *tu venit*, as well as *ille* or *illud venit*. And I make no doubt but they would have done ſo, if at the time when they had firſt occaſion to expreſs theſe relations of the verb there had been any ſuch words as either *ego* or *tu* in their language. But in this early period of the language, which we are now endeavouring to deſcribe, it is extremely improbable that any ſuch words would be known. Though cuſtom has now rendered them familiar to us, they, both of them, expreſs ideas extremely metaphyſical and abſtract. The word *I*, for example, is a word of a very particular ſpecies. Whatever ſpeaks may denote itſelf by this perſonal pronoun. The

word *I*, therefore, is a general word, capable of being predicated, as the logicians ſay, of an infinite variety of objects. It differs, however, from all other general words in this reſpect; that the objects of which it may be predicated, do not form any particular ſpecies of objects diſtinguiſhed from all others. The word *I*, does not, like the word *man*, denote a particular claſs of objects, ſeparated from all others by peculiar qualities of their own. It is far from being the name of a ſpecies, but, on the contrary, whenever it is made uſe of, it always denotes a preciſe individual, the particular perſon who then ſpeaks. It may be ſaid to be, at once, both what the logicians call, a ſingular, and what they call, a common term; and to join in its ſignification the ſeemingly oppoſite qualities of the moſt preciſe individuality, and the moſt extenſive generalization. This word, therefore, expreſſing ſo very abſtract and metaphyſical an idea, would not eaſily or readily occur to the firſt formers of language. What are called the perſonal pronouns, it may be obſerved, are among the laſt words of which children learn to make uſe. A child, ſpeaking of itſelf, ſays, *Billy walks*, *Billy ſits*, inſteads of *I walk*, *I ſit*. As in the beginnings of language, therefore, mankind ſeem to have evaded the invention of at leaſt the more abſtract prepoſitions, and to have expreſſed the ſame relations which those

now

now ſtand for, by varying the termination of the co-relative term, ſo they likewiſe would naturally attempt to evade the neceſſity of inventing thoſe more abſtract pronouns by varying the termination of the verb, according as the event which it expreſſed was intended to be affirmed of the firſt, ſecond, or third perſon. This ſeems, accordingly, to be the univerſal practice of all the ancient languages. In Latin, *veni*, *veniſti*, *venit*, ſufficiently denote, without any other addition, the different events expreſſed by the Engliſh phraſes, *I came*, *you came*, *he* or *it came*. The verb would, for the ſame reaſon, vary its termination, according as the event was intended to be affirmed of the firſt, ſecond, or third perſons plural; and what is expreſſed by the Engliſh phraſes, *we came*, *ye came*, *they came*, would be denoted by the Latin words, *venimus*, *veniſtis*, *venerunt*. Thoſe primitive languages, too, which, upon account of the difficulty of inventing numeral names, had introduced a dual, as well as a plural number, into the declenſion of their nouns ſubſtantive, would probably, from analogy, do the ſame thing in the conjugations of their verbs. And thus in all original languages, we might expect to find, at leaſt ſix, if not eight or nine variations, in the termination of every verb, according as the event which it denoted was meant to be affirmed of the firſt, ſecond,

or third perſons ſingular, dual, or plural. Theſe variations again being repeated, along with others, through all its different tenſes, through all its different modes, and through all its different voices, muſt neceſſarily have rendered their conjugations ſtill more intricate and complex than their declenſions.

Language would probably have continued upon this footing in all countries, nor would ever have grown more ſimple in its declenſions and conjugations, had it not become more complex in its compoſition, in conſequence of the mixture of ſeveral languages with one another, occaſioned by the mixture of different nations. As long as any language was ſpoke by thoſe only who learned it in their infancy, the intricacy of its declenſions and conjugations could occaſion no great embarraſſment. The far greater part of thoſe who had occaſion to ſpeak it, had acquired it at ſo very early a period of their lives, ſo inſenſibly and by ſuch ſlow degrees, that they were ſcarce ever ſenſible of the difficulty. But when two nations came to be mixed with one another, either by conqueſt or migration, the caſe would be very different. Each nation, in order to make itſelf intelligible to thoſe with whom it was under the neceſſity of converſing, would be obliged to learn the language of the other. The greater part of individuals too, learning the new language,

guage, not by art, or by remounting to its rudiments and firſt principles, but by rote, and by what they commonly heard in converſation, would be extremely perplexed by the intricacy of its declenſions and conjugations. They would endeavour, therefore, to ſupply their ignorance of theſe, by whatever ſhift the language could afford them. Their ignorance of the declenſions they would naturally ſupply by the uſe of prepoſitions; and a Lombard, who was attempting to ſpeak Latin, and wanted to expreſs that ſuch a perſon was a citizen of Rome, or a benefactor to Rome, if he happened not to be acquainted with the genitive and dative caſes of the word *Roma*, would naturally expreſs himſelf by prefixing the prepoſitions *ad* and *de* to the nominative; and inſtead of *Romæ*, would ſay, *ad Roma*, and *de Roma*. *Al Roma* and *di Roma*, accordingly, is the manner in which the preſent Italians, the deſcendants of the ancient Lombards and Romans, expreſs this and all other ſimilar relations. And in this manner prepoſitions ſeem to have been introduced, in the room of the ancient declenſions. The ſame alteration has, I am informed, been produced upon the Greek language, ſince the taking of Conſtantinople by the Turks. The words are, in a great meaſure, the ſame as before; but the grammar is entirely loſt, prepoſitions having come in the place of the old declen-

ſions. This change is undoubtedly a ſimplification of the language, in point of rudiments and principle. It introduces, inſtead of a great variety of declenſions, one univerſal declenſion, which is the ſame in every word, of whatever gender, number or termination.

A ſimilar expedient enables men, in the ſituation above mentioned, to get rid of almoſt the whole intricacy of their conjugations. There is in every language a verb, known by the name of the ſubſtantive verb; in Latin, *ſum;* in Engliſh, *I am.* This verb denotes not the exiſtence of any particular event, but exiſtence in general. It is, upon that account, the moſt abſtract and metaphyſical of all verbs; and, conſequently, could by no means be a word of early invention. When it came to be invented, however, as it had all the tenſes and modes of any other verb, by being joined with the paſſive participle, it was capable of ſupplying the place of the whole paſſive voice, and of rendering this part of their conjugations as ſimple and uniform, as the uſe of prepoſitions had rendered their declenſions. A Lombard, who wanted to ſay, *I am loved*, but could not recollect the word *amor*, naturally endeavoured to ſupply his ignorance, by ſaying, *ego ſum amatus. Io ſono amato*, is at this day the Italian expreſſion, which correſponds to the Engliſh phraſe above mentioned.

There

There is another verb, which, in the ſame manner, runs through all languages, and which is diſtinguiſhed by the name of the poſſeſſive verb; in Latin, *habeo*; in Engliſh, *I have*. This verb, likewiſe, denotes an event of an extremely abſtract and metaphyſical nature, and, conſequently, cannot be ſuppoſed to have been a word of the earlieſt invention. When it came to be invented, however, by being applied to the paſſive participle, it was capable of ſupplying a great part of the active voice, as the ſubſtantive verb had ſupplied the whole of the paſſive. A Lombard, who wanted to ſay, *I had loved*, but could not recollect the word *amaveram*, would endeavour to ſupply the place of it, by ſaying either *ego habebam amatum*, or *ego habui amatum*. *Io aveva amato*, or *Io ebbi amato*, are the correſpondent Italian expreſſions at this day. And thus upon the intermixture of different nations with one another, the conjugations, by means of different auxiliary verbs, were made to approach towards the ſimplicity and uniformity of the declenſions.

In general it may be laid down for a maxim, that the more ſimple any language is in its compoſition, the more complex it muſt be in its declenſions and conjugations; and on the contrary, the more ſimple it is in its declenſions and conjugations, the more complex it muſt be in its compoſition.

The Greek ſeems to be, in a great meaſure, a ſimple, uncompounded language, formed from the primitive jargon of thoſe wandering ſavages, the ancient Hellenians and Pelaſgians, from whom the Greek nation is ſaid to have been deſcended. All the words in the Greek language are derived from about three hundred primitives, a plain evidence that the Greeks formed their language almoſt entirely among themſelves, and that when they had occaſion for a new word, they were not accuſtomed, as we are, to borrow it from ſome foreign language, but to form it, either by compoſition or derivation, from ſome other word or words, in their own. The declenſions and conjugations, therefore, of the Greek are much more complex than thoſe of any other European language with which I am acquainted.

The Latin is a compoſition of the Greek and of the ancient Tuſcan languages. Its declenſions and conjugations accordingly are much leſs complex than thoſe of the Greek; it has dropt the dual number in both. Its verbs have no optative mood diſtinguiſhed by any peculiar termination. They have but one future. They have no aoriſt diſtinct from the preterit-perfect; they have no middle voice; and even many of their tenſes in the paſſive voice are eked out, in the ſame manner as in the modern languages, by the help of the ſubſtantive verb joined to the

paſſive

paſſive participle. In both the voices, the number of infinitives and participles is much ſmaller in the Latin than in the Greek.

The French and Italian languages are each of them compounded, the one of the Latin, and the language of the ancient Franks, the other of the ſame Latin, and the language of the ancient Lombards. As they are both of them, therefore, more complex in their compoſition than the Latin, ſo are they likewiſe more ſimple in their declenſions and conjugations. With regard to their declenſions, they have both of them loſt their caſes altogether; and with regard to their conjugations, they have both of them loſt the whole of the paſſive, and ſome part of the active voices of their verbs. The want of the paſſive voice they ſupply entirely by the ſubſtantive verb joined to the paſſive participle; and they make out part of the active, in the ſame manner, by the help of the poſſeſſive verb and the ſame paſſive participle.

The Engliſh is compounded of the French and the ancient Saxon languages. The French was introduced into Britain by the Norman conqueſt, and continued, till the time of Edward III. to be the ſole language of the law as well as the principal language of the court. The Engliſh, which came to be ſpoken afterwards, and which continues to be ſpoken now, is a mixture of the ancient

Saxon

Saxon and this Norman French. As the Engliſh language, therefore, is more complex in its compoſition than either the French or the Italian, ſo is it likewiſe more ſimple in its declenſions and conjugations. Thoſe two languages retain, at leaſt, a part of the diſtinction of genders, and their adjectives vary their termination according as they are applied to a maſculine or to a feminine ſubſtantive. But there is no ſuch diſtinction in the Engliſh language, whoſe adjectives admit of no variety of termination. The French and Italian languages have, both of them, the remains of a conjugation; and all thoſe tenſes of the active voice, which cannot be expreſſed by the poſſeſſive verb joined to the paſſive participle, as well as many of thoſe which can, are, in thoſe languages, marked by varying the termination of the principal verb. But almoſt all thoſe other tenſes are in the Engliſh eked out by other auxiliary verbs, ſo that there is in this language ſcarce even the remains of a conjugation. *I love*, *I loved*, *loving*, are all the varieties of termination which the greater part of the Engliſh verbs admit of. All the different modifications of meaning, which cannot be expreſſed by any of thoſe three terminations, muſt be made out by different auxiliary verbs joined to ſome one or other of them. Two auxiliary verbs ſupply all the deficiencies of the French and Italian conjugations; it requires

requires more than half a dozen to ſupply thoſe of the Engliſh, which, beſides the ſubſtantive and poſſeſſive verbs, makes uſe of *do*, *did*; *will*, *would*; *ſhall*, *ſhould*; *can*, *could*; *may*, *might*.

It is in this manner that language becomes more ſimple in its rudiments and principles, juſt in proportion as it grows more complex in its compoſition, and the ſame thing has happened in it, which commonly happens with regard to mechanical engines. All machines are generally, when firſt invented, extremely complex in their principles, and there is often a particular principle of motion for every particular movement which it is intended they ſhould perform. Succeeding improvers obſerve, that one principle may be ſo applied as to produce ſeveral of thoſe movements; and thus the machine becomes gradually more and more ſimple, and produces its effects with fewer wheels, and fewer principles of motion. In language, in the ſame manner, every caſe of every noun, and every tenſe of every verb, was originally expreſſed by a particular diſtinct word, which ſerved for this purpoſe and for no other. But ſucceeding obſervations diſcovered, that one ſet of words was capable of ſupplying the place of all that infinite number, and that four or five prepoſitions, and half a dozen auxiliary verbs, were capable of anſwering the end of all the declenſions,

clenſions, and of all the conjugations in the ancient languages.

But this ſimplification of languages, though it ariſes, perhaps, from ſimilar cauſes, has by no means ſimilar effects with the correſpondent ſimplification of machines. The ſimplification of machines renders them more and more perfect, but this ſimplification of the rudiments of languages renders them more and more imperfect, and leſs proper for many of the purpoſes of language: and this for the following reaſons.

Firſt of all, languages are by this ſimplification rendered more prolix, ſeveral words having become neceſſary to expreſs what could have been expreſſed by a ſingle word before. Thus the words, *Dei* and *Deo*, in the Latin, ſufficiently ſhow, without any addition, what relation the object ſignified is underſtood to ſtand in to the objects expreſſed by the other words in the ſentence. But to expreſs the ſame relation in Engliſh, and in all other modern languages, we muſt make uſe of, at leaſt, two words, and ſay, *of God*, *to God*. So far as the declenſions are concerned, therefore, the modern languages are much more prolix than the ancient. The difference is ſtill greater with regard to the conjugations. What a Roman expreſſed by the ſingle word, *amaviſſem*, an Engliſhman is obliged to expreſs by four different words, *I*

ſhould

ſhould have loved. It is unneceſſary to take any pains to ſhow how much this prolixneſs muſt enervate the eloquence of all modern languages. How much the beauty of any expreſſion depends upon its conciſeneſs, is well known to thoſe who have any experience in compoſition.

Secondly, this ſimplification of the principles of languages renders them leſs agreeable to the ear. The variety of termination in the Greek and Latin, occaſioned by their declenſions and conjugations, gives a ſweetneſs to their language altogether unknown to ours, and a variety unknown to any other modern language. In point of ſweetneſs, the Italian, perhaps, may ſurpaſs the Latin, and almoſt equal the Greek; but in point of variety, it is greatly inferior to both.

Thirdly, this ſimplification, not only renders the ſounds of our language leſs agreeable to the ear, but it alſo reſtrains us from diſpoſing ſuch ſounds as we have, in the manner that might be moſt agreeable. It ties down many words to a particular ſituation, though they might often be placed in another with much more beauty. In the Greek and Latin, though the adjective and ſubſtantive were ſeparated from one another, the correſpondence of their terminations ſtill ſhowed their mutual reference, and the ſeparation did not neceſ-

ſarily

ſarily occaſion any ſort of confuſion. Thus in the firſt line of Virgil,

Tityre tu patulæ recubans ſub tegmine fagi;

we eaſily ſee that *tu* refers to *recubans*, and *patulæ* to *fagi*; though the related words are ſeparated from one another by the intervention of ſeveral others; becauſe the terminations, ſhowing the correſpondence of their caſes, determine their mutual reference. But if we were to tranſlate this line literally into Engliſh, and ſay, *Tityrus, thou of ſpreading reclining under the ſhade beech*, Œdipus himſelf could not make ſenſe of it; becauſe there is here no difference of termination, to determine which ſubſtantive each adjective belongs to. It is the ſame caſe with regard to verbs. In Latin the verb may often be placed, without any inconveniency or ambiguity, in any part of the ſentence. But in Engliſh its place is almoſt always preciſely determined. It muſt follow the ſubjective and precede the objective member of the phraſe in almoſt all caſes. Thus in Latin whether you ſay, *Joannem verberavit Robertus*, or *Robertus verberavit Joannem*, the meaning is preciſely the ſame, and the termination fixes John to be the ſufferer in both caſes. But in Engliſh *John beat Robert*, and *Robert beat John*, have by no means the ſame ſignification.

fication. The place therefore of the three principal members of the phrase is in the English, and for the same reason in the French and Italian languages, almost always precisely determined; whereas in the ancient languages a greater latitude is allowed, and the place of those members is often, in a great measure, indifferent. We must have recourse to Horace, in order to interpret some parts of Milton's literal translation;

> Who now enjoys thee credulous all gold,
> Who always vacant, always amiable
> Hopes thee; of flattering gales
> Unmindful—

are verses which it is impossible to interpret by any rules of our language. There are no rules in our language, by which any man could discover, that, in the first line, *credulous* referred to *who*, and not to *thee*; or that *all gold* referred to any thing; or, that in the fourth line, *unmindful*, referred to *who*, in the second, and not to *thee* in the third; or, on the contrary, that, in the second line, *always vacant*, *always amiable*, referred to *thee* in the third, and not to *who* in the same line with it. In the Latin, indeed, all this is abundantly plain.

> Qui nunc te fruitur credulus aureâ,
> Qui semper vacuam, semper amabilem
> Sperat te; nescius auræ fallacis.

Because the terminations in the Latin de-

termine the reference of each adjective to its proper ſubſtantive, which it is impoſſible for any thing in the Engliſh to do. How much this power of tranſpoſing the order of their words muſt have facilitated the compoſition of the ancients, both in verſe and proſe, can hardly be imagined. That it muſt greatly have facilitated their verſification it is needleſs to obſerve; and in proſe, whatever beauty depends upon the arrangement and conſtruction of the ſeveral members of the period, muſt to them have been acquirable with much more eaſe, and to much greater perfection, than it can be to thoſe whoſe expreſſion is conſtantly confined by the prolixneſs, conſtraint, and monotony of modern languages.

ESSAYS

ON

PHILOSOPHICAL SUBJECTS.

ADVERTISEMENT

BY

THE EDITORS.

THE much lamented Author of theſe Eſſays left them in the hands of his friends to be diſpoſed of as they thought proper, having immediately before his death deſtroyed many other manuſcripts which he thought unfit for being made public. When theſe were inſpected, the greater number of them appeared to be parts of a plan he once had formed, for giving a connected hiſtory of the liberal ſciences and elegant arts. It is long ſince he found it neceſſary to abandon that plan as far too extenſive; and theſe parts of it lay beſide him neglected until his death. His friends are perſuaded however, that the reader will find in them that happy connection, that full and accurate expreſſion, and that clear illuſtration which are conſpicuous in the

reſt of his works; and that though it is difficult to add much to the great fame he ſo juſtly acquired by his other writings, theſe will be read with ſatisfaction and pleaſure.

JOSEPH BLACK.
JAMES HUTTON.

THE

PRINCIPLES

WHICH LEAD AND DIRECT

PHILOSOPHICAL ENQUIRIES;

ILLUSTRATED BY THE

HISTORY OF ASTRONOMY.

THE

HISTORY

OF

ASTRONOMY.

WONDER, ſurpriſe, and admiration, are words which, though often confounded, denote, in our language, ſentiments that are indeed allied, but that are in ſome reſpects different alſo, and diſtinct from one another. What is new and ſingular, excites that ſentiment which, in ſtrict propriety, is called Wonder; what is unexpected, Surpriſe; and what is great or beautiful, Admiration.

We wonder at all extraordinary and uncommon objects, at all the rarer phænomena of nature, at meteors, comets, eclipſes, at ſingular plants and animals, and at every thing, in ſhort, with which we have before been either little or not at all acquainted; and we ſtill wonder, though forewarned of what we are to ſee.

We are ſurpriſed at thoſe things which we have ſeen often, but which we leaſt of all

expected to meet with in the place where we find them; we are ſurpriſed at the ſudden appearance of a friend, whom we have ſeen a thouſand times, but whom we did not imagine we were to ſee then.

We admire the beauty of a plain or the greatneſs of a mountain, though we have ſeen both often before, and though nothing appears to us in either, but what we had expected with certainty to ſee.

Whether this criticiſm upon the preciſe meaning of theſe words be juſt, is of little importance. I imagine it is juſt, though I acknowledge, that the beſt writers in our language have not always made uſe of them according to it. Milton, upon the appearance of Death to Satan, ſays, that

> The Fiend what this might be admir'd;
> Admir'd, not fear'd.———

But if this criticiſm be juſt, the proper expreſſion ſhould have been *wonder'd*.—Dryden, upon the diſcovery of Iphigenia ſleeping, ſays, that

> The fool of nature ſtood with ſtupid eyes
> And gaping mouth, that teſtified ſurpriſe.

But what Cimon muſt have felt upon this occaſion could not ſo much be Surpriſe, as Wonder and Admiration. All that I contend for is, that the ſentiments excited by what is new, by what is unexpected, and by what is great

great and beautiful, are really different, however the words made uſe of to expreſs them may ſometimes be confounded. Even the admiration which is excited by beauty, is quite different (as will appear more fully hereafter) from that which is inſpired by greatneſs, though we have but one word to denote them.

Theſe ſentiments, like all others when inſpired by one and the ſame object, mutually ſupport and enliven one another: an object with which we are quite familiar, and which we ſee every day, produces, though both great and beautiful, but a ſmall effect upon us; becauſe our admiration is not ſupported either by Wonder or by Surpriſe: and if we have heard a very accurate deſcription of a monſter, our Wonder will be the leſs when we ſee it; becauſe our previous knowledge of it will in a great meaſure prevent our Surpriſe.

It is the deſign of this Eſſay to conſider particularly the nature and cauſes of each of theſe ſentiments, whoſe influence is of far wider extent than we ſhould be apt upon a careleſs view to imagine. I ſhall begin with Surpriſe.

SEC.

SECTION I.

Of the Effect of Unexpectedness, or of Surprise.

SECT. I.

WHEN an object of any kind, which has been for some time expected and foreseen, presents itself, whatever be the emotion which it is by nature fitted to excite, the mind must have been prepared for it, and must even in some measure have conceived it before-hand; because the idea of the object having been so long present to it, must have before-hand excited some degree of the same emotion which the object itself would excite: the change, therefore, which its presence produces comes thus to be less considerable, and the emotion or passion which it excites glides gradually and easily into the heart, without violence, pain, or difficulty.

But the contrary of all this happens when the object is unexpected; the passion is then poured in all at once upon the heart, which is thrown, if it is a strong passion, into the most violent and convulsive emotions, such as sometimes cause immediate death; sometimes, by the suddenness of the extacy, so entirely disjoint the whole frame of the imagination, that it never after returns to its former tone

 and

and composure, but falls either into a frenzy or habitual lunacy; and such as almost always occasion a momentary loss of reason, or of that attention to other things which our situation or our duty requires.

How much we dread the effects of the more violent passions, when they come suddenly upon the mind, appears from those preparations which all men think necessary when going to inform any one of what is capable of exciting them. Who would choose all at once to inform his friend of an extraordinary calamity that had befallen him, without taking care before-hand, by alarming him with an uncertain fear, to announce, if one may say so, his misfortune, and thereby prepare and dispose him for receiving the tidings?

Those panic terrors which sometimes seize armies in the field, or great cities, when an enemy is in the neighbourhood, and which deprive for a time the most determined of all deliberate judgments, are never excited but by the sudden apprehension of unexpected danger. Such violent consternations, which at once confound whole multitudes, benumb their understandings, and agitate their hearts, with all the agony of extravagant fear, can never be produced by any foreseen danger, how great soever. Fear, though naturally a very strong passion, never rises to such excesses, unless exasperated both by Wonder, from the uncertain

SECT. I. uncertain nature of the danger, and by Surprise, from the suddenness of the apprehension.

Surprise, therefore, is not to be regarded as an original emotion of a species distinct from all others. The violent and sudden change produced upon the mind, when an emotion of any kind is brought suddenly upon it, constitutes the whole nature of Surprise.

But when not only a passion and a great passion comes all at once upon the mind, but when it comes upon it while the mind is in the mood most unfit for conceiving it, the Surprise is then the greatest. Surprises of joy when the mind is sunk into grief, or of grief when it is elated with joy, are therefore the most unsupportable. The change is in this case the greatest possible. Not only a strong passion is conceived all at once, but a strong passion the direct opposite of that which was before in possession of the soul. When a load of sorrow comes down upon the heart that is expanded and elated with gaiety and joy, it seems not only to damp and oppress it, but almost to crush and bruise it, as a real weight would crush and bruise the body. On the contrary, when from an unexpected change of fortune, a tide of gladness seems, if I may say so, to spring up all at once within it, when depressed and contracted with grief and sorrow, it feels as if suddenly extended and

and heaved up with violent and irreſiſtible force, and is torn with pangs of all others moſt exquiſite, and which almoſt always occaſion faintings, deliriums, and ſometimes inſtant death. For it may be worth while to obſerve, that though grief be a more violent paſſion than joy, as indeed all uneaſy ſenſations ſeem naturally more pungent than the oppoſite agreeable ones, yet of the two, Surpriſes of joy are ſtill more inſupportable than Surpriſes of grief. We are told that after the battle of Thraſimenus, while a Roman lady, who had been informed that her ſon was ſlain in the action, was ſitting alone bemoaning her miſfortunes, the young man who eſcaped came ſuddenly into the room to her, and that ſhe cried out and expired inſtantly in a tranſport of joy. Let us ſuppoſe the contrary of this to have happened, and that in the midſt of domeſtic feſtivity and mirth, he had ſuddenly fallen down dead at her feet, is it likely that the effects would have been equally violent? I imagine not. The heart ſprings to joy with a ſort of natural elaſticity, it abandons itſelf to ſo agreeable an emotion, as ſoon as the object is preſented; it ſeems to pant and leap forward to meet it, and the paſſion in its full force takes at once entire and complete poſſeſſion of the ſoul. But it is otherways with grief; the heart recoils from, and reſiſts the

SECT. I. the firſt approaches of that diſagreeable paſſion, and it requires ſome time before the melancholy object can produce its full effect. Grief comes on ſlowly and gradually, nor ever riſes at once to that height of agony to which it is increaſed after a little time. But joy comes ruſhing upon us all at once like a torrent. The change produced therefore by a Surpriſe of joy is more ſudden, and upon that account more violent and apt to have more fatal effects, than that which is occaſioned by a Surpriſe of grief; there ſeems too to be ſomething in the nature of Surpriſe, which makes it unite more eaſily with the briſk and quick motion of joy, than with the ſlower and heavier movement of grief. Moſt men who can take the trouble to recollect, will find that they have heard of more people who died or became diſtracted with ſudden joy, than with ſudden grief. Yet from the nature of human affairs, the latter muſt be much more frequent than the former. A man may break his leg, or loſe his ſon, though he has had no warning of either of theſe events, but he can hardly meet with an extraordinary piece of good fortune, without having had ſome foreſight of what was to happen.

Not only grief and joy but all the other paſſions, are more violent, when oppoſite extremes ſucceed each other. Is any reſentment

ment ſo keen as what follows the quarrels of lovers, or any love ſo paſſionate as what attends their reconcilement?

Even the objects of the external ſenſes affect us in a more lively manner, when oppoſite extremes ſucceed to, or are placed beſide each other. Moderate warmth ſeems intolerable heat if felt after extreme cold. What is bitter will ſeem more ſo when taſted after what is very ſweet; a dirty white will ſeem bright and pure when placed by a jet black. The vivacity in ſhort of every ſenſation, as well as of every ſentiment, ſeems to be greater or leſs in proportion to the change made by the impreſſion of either upon the ſituation of the mind or organ; but this change muſt neceſſarily be the greateſt when oppoſite ſentiments and ſenſations are contraſted, or ſucceed immediately to one another. Both ſentiments and ſenſations are then the livelieſt; and this ſuperior vivacity proceeds from nothing but their being brought upon the mind or organ when in a ſtate moſt unfit for conceiving them.

As the oppoſition of contraſted ſentiments heightens their vivacity, ſo the reſemblance of thoſe which immediately ſucceed each other renders them more faint and languid. A parent who has loſt ſeveral children immediately after one another, will be leſs affected with the death of the laſt than with that of

the

SECT. I. the firſt, though the loſs in itſelf be, in this caſe, undoubtedly greater; but his mind being already ſunk into ſorrow, the new misfortune ſeems to produce no other effect than a continuance of the ſame melancholy, and is by no means apt to occaſion ſuch tranſports of grief as are ordinarily excited by the firſt calamity of the kind; he receives it, though with great dejection, yet with ſome degree of calmneſs and compoſure, and without any thing of that anguiſh and agitation of mind which the novelty of the misfortune is apt to occaſion. Thoſe who have been unfortunate through the whole courſe of their lives are often indeed habitually melancholy, and ſometimes peeviſh and ſplenetic, yet upon any freſh diſappointment, though they are vexed and complain a little, they ſeldom fly out into any more violent paſſion, and never fall into thoſe tranſports of rage or grief which often, upon the like occaſions, diſtract the fortunate and ſucceſsful.

Upon this are founded, in a great meaſure, ſome of the effects of habit and cuſtom. It is well known that cuſtom deadens the vivacity of both pain and pleaſure, abates the grief we ſhould feel for the one, and weakens the joy we ſhould derive from the other. The pain is ſupported without agony, and the pleaſure enjoyed without rapture: becauſe cuſtom and the frequent repetition of any object comes at

laſt

laſt to form and bend the mind or organ to that habitual mood and diſpoſition which fits them to receive its impreſſion, without undergoing any very violent change.

SECT. II.

Of Wonder, or of the Effects of Novelty.

IT is evident that the mind takes pleaſure in obſerving the reſemblances that are diſcoverable betwixt different objects. It is by means of ſuch obſervations that it endeavours to arrange and methodiſe all its ideas, and to reduce them into proper claſſes and aſſortments. Where it can obſerve but one ſingle quality, that is common to a great variety of otherwiſe widely different objects, that ſingle circumſtance will be ſufficient for it to connect them all together, to reduce them to one common claſs, and to call them by one general name. It is thus that all things endowed with a power of ſelf-motion, beaſts, birds, fiſhes, inſects, are claſſed under the general name of Animal; and that theſe again, along with thoſe which want that power, are arranged under the ſtill more general word Subſtance: and this is the origin of thoſe aſſortments of objects and ideas which

SECT. II. in the ſchools are called Genera and Species, and of thoſe abſtract and general names, which in all languages are made uſe of to expreſs them.

The further we advance in knowledge and experience, the greater number of diviſions and ſubdiviſions of thoſe Genera and Species we are both inclined and obliged to make. We obſerve a greater variety of particularities amongſt thoſe things which have a groſs reſemblance; and having made new diviſions of them, according to thoſe newly-obſerved particularities, we are then no longer to be ſatisfied with being able to refer an object to a remote genus, or very general claſs of things, to many of which it has but a looſe and imperfect reſemblance. A perſon, indeed, unacquainted with botany may expect to ſatisfy your curioſity, by telling you, that ſuch a vegetable is a weed, or, perhaps in ſtill more general terms, that it is a plant. But a botaniſt will neither give nor accept of ſuch an anſwer. He has broke and divided that great claſs of objects into a number of inferior aſſortments, according to thoſe varieties which his experience has diſcovered among them; and he wants to refer each individual plant to ſome tribe of vegetables, with all of which it may have a more exact reſemblance, than with many things comprehended under the extenſive genus of plants. A child imagines

gines that it gives a ſatisfactory anſwer when it tells you, that an object whoſe name it knows not is a thing, and fancies that it informs you of ſomething, when it thus aſcertains to which of the two moſt obvious and comprehenſive claſſes of objects a particular impreſſion ought to be referred; to the claſs of realities or ſolid ſubſtances which it calls *things*, or to that of appearances which it calls *nothings*.

Whatever, in ſhort, occurs to us we are fond of referring to ſome ſpecies or claſs of things, with all of which it has a nearly exact reſemblance: and though we often know no more about them than about it, yet we are apt to fancy that by being able to do ſo, we ſhow ourſelves to be better acquainted with it, and to have a more thorough inſight into its nature. But when ſomething quite new and ſingular is preſented, we feel ourſelves incapable of doing this. The memory cannot, from all its ſtores, caſt up any image that nearly reſembles this ſtrange appearance. If by ſome of its qualities it ſeems to reſemble, and to be connected with a ſpecies which we have before been acquainted with, it is by others ſeparated and detached from that, and from all the other aſſortments of things we have hitherto been able to make. It ſtands alone and by itſelf in the imagination, and refuſes to be grouped or confounded with any

ſet of objects whatever. The imagination and memory exert themſelves to no purpoſe, and in vain look around all their claſſes of ideas in order to find one under which it may be arranged. They fluctuate to no purpoſe from thought to thought, and we remain ſtill uncertain and undetermined where to place it, or what to think of it. It is this fluctuation and vain recollection, together with the emotion or movement of the ſpirits that they excite, which conſtitute the ſentiment properly called *Wonder*, and which occaſion that ſtaring, and ſometimes that rolling of the eyes, that ſuſpenſion of the breath, and that ſwelling of the heart, which we may all obſerve, both in ourſelves and others, when wondering at ſome new object, and which are the natural ſymptoms of uncertain and undetermined thought. What ſort of a thing can that be? What is that like? are the queſtions which, upon ſuch an occaſion, we are all naturally diſpoſed to aſk. If we can recollect many ſuch objects which exactly reſemble this new appearance, and which preſent themſelves to the imagination naturally, and as it were of their own accord, our Wonder is entirely at an end. If we can recollect but a few, and which it requires too ſome trouble to be able to call up, our Wonder is indeed diminiſhed, but not quite deſtroyed. If we can recollect none, but are quite at a loſs, it is the greateſt poſſible.

With

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With what curious attention does a naturaliſt examine a ſingular plant, or a ſingular foſſil, that is preſented to him? He is at no loſs to refer it to the general genus of plants or foſſils; but this does not ſatisfy him, and when he conſiders all the different tribes or ſpecies of either with which he has hitherto been acquainted, they all, he thinks, refuſe to admit the new object among them. It ſtands alone in his imagination, and as it were detached from all the other ſpecies of that genus to which it belongs. He labours, however, to connect it with ſome one or other of them. Sometimes he thinks it may be placed in this, and ſometimes in that other aſſortment; nor is he ever ſatisfied, till he has fallen upon one which, in moſt of its qualities, it reſembles. When he cannot do this, rather than it ſhould ſtand quite by itſelf, he will enlarge the precincts, if I may ſay ſo, of ſome ſpecies, in order to make room for it; or he will create a new ſpecies on purpoſe to receive it, and call it a Play of Nature, or give it ſome other appellation, under which he arranges all the oddities that he knows not what elſe to do with. But to ſome claſs or other of known objects he muſt refer it, and betwixt it and them he muſt find out ſome reſemblance, or other, before he can get rid of that Wonder, that uncertainty and anxious curioſity excited by its ſingular appearance, and by its diſſimi-

SECT. II. litude with all the objects he had hitherto obſerved.

As ſingle and individual objects thus excite our Wonder when, by their uncommon qualities and ſingular appearance, they make us uncertain to what ſpecies of things we ought to refer them; ſo a ſucceſſion of objects which follow one another in an uncommon train or order, will produce the ſame effect, though there be nothing particular in any one of them taken by itſelf.

When one accuſtomed object appears after another, which it does not uſually follow, it firſt excites, by its unexpectedneſs, the ſentiment properly called Surpriſe, and afterwards, by the ſingularity of the ſucceſſion, or order of its appearance, the ſentiment properly called Wonder. We ſtart and are ſurpriſed at ſeeing it there, and then wonder how it came there. The motion of a ſmall piece of iron along a plain table is in itſelf no extraordinary object, yet the perſon who firſt ſaw it begin, without any viſible impulſe, in conſequence of the motion of a loadſtone at ſome little diſtance from it, could not behold it without the moſt extreme Surpriſe; and when that momentary emotion was over, he would ſtill wonder how it came to be conjoined to an event with which, according to the ordinary train of things, he could have ſo little ſuſpected it to have any connection.

When

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When two objects, however unlike, have often been obſerved to follow each other, and have conſtantly preſented themſelves to the ſenſes in that order, they come to be connected together in the fancy, that the idea of the one ſeems, of its own accord, to call up and introduce that of the other. If the objects are ſtill obſerved to ſucceed each other as before, this connection, or, as it has been called, this aſſociation of their ideas, becomes ſtricter and ſtricter, and the habit of the imagination to paſs from the conception of the one to that of the other, grows more and more rivetted and confirmed. As its ideas move more rapidly than external objects, it is continually running before them, and therefore anticipates, before it happens, every event which falls out according to this ordinary courſe of things. When objects ſucceed each other in the ſame train in which the ideas of the imagination have thus been accuſtomed to move, and in which, though not conducted by that chain of events preſented to the ſenſes, they have acquired a tendency to go on of their own accord, ſuch objects appear all cloſely connected with one another, and the thought glides eaſily along them, without effort and without interruption. They fall in with the natural career of the imagination; and as the ideas which repreſented ſuch a train of things would ſeem all

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mutually to introduce each other, every laſt thought to be called up by the foregoing, and to call up the ſucceeding; ſo when the objects themſelves occur, every laſt event ſeems, in the ſame manner, to be introduced by the foregoing, and to introduce the ſucceeding. There is no break, no ſtop, no gap, no interval. The ideas excited by ſo coherent a chain of things ſeem, as it were, to float through the mind of their own accord, without obliging it to exert itſelf, or to make any effort in order to paſs from one of them to another.

But if this cuſtomary connection be interrupted, if one or more objects appear in an order quite different from that to which the imagination has been accuſtomed, and for which it is prepared, the contrary of all this happens. We are at firſt ſurpriſed by the unexpectedneſs of the new appearance, and when that momentary emotion is over, we ſtill wonder how it came to occur in that place. The imagination no longer feels the uſual facility of paſſing from the event which goes before to that which comes after. It is an order or law of ſucceſſion to which it has not been accuſtomed, and which it therefore finds ſome difficulty in following, or in attending to. The fancy is ſtopped and interrupted in that natural movement or career, according to which it was proceeding. Thoſe two events ſeem to ſtand at a diſtance from each other; it

it endeavours to bring them together, but they refuſe to unite; and it feels, or imagines it feels ſomething like a gap or interval betwixt them. It naturally heſitates, and, as it were, pauſes upon the brink of this interval; it endeavours to find out ſomething which may fill up the gap, which, like a bridge, may ſo far at leaſt unite thoſe ſeemingly diſtant objects, as to render the paſſage of the thought betwixt them ſmooth, and natural, and eaſy. The ſuppoſition of a chain of intermediate, though inviſible, events, which ſucceed each other in a train ſimilar to that in which the imagination has been accuſtomed to move, and which link together thoſe two disjointed appearances, is the only means by which the imagination can fill up this interval, is the only bridge which, if one may ſay ſo, can ſmooth its paſſage from the one object to the other. Thus, when we obſerve the motion of the iron, in conſequence of that of the loadſtone, we gaze and heſitate, and feel a want of connection betwixt two events which follow one another in ſo unuſual a train. But when, with Des Cartes, we imagine certain inviſible effluvia to circulate round one of them, and by their repeated impulſes to impel the other, both to move towards it, and to follow its motion, we fill up the interval betwixt them, we join them together by a ſort of bridge, and thus take off that heſitation and difficulty which

SECT. II. which the imagination felt in paſſing from the one to the other. That the iron ſhould move after the loadſtone ſeems, upon this hypotheſis, in ſome meaſure according to the ordinary courſe of things. Motion after impulſe is an order of ſucceſſion with which of all things we are the moſt familiar. Two objects which are ſo connected ſeem no longer to be disjointed, and the imagination flows ſmoothly and eaſily along them.

Such is the nature of this ſecond ſpecies of Wonder, which ariſes from an unuſual ſucceſſion of things. The ſtop which is thereby given to the career of the imagination, the difficulty which it finds in paſſing along ſuch disjointed objects, and the feeling of ſomething like a gap or interval betwixt them, conſtitute the whole eſſence of this emotion. Upon the clear diſcovery of a connecting chain of intermediate events, it vaniſhes altogether. What obſtructed the movement of the imagination is then removed. Who wonders at the machinery of the opera-houſe who has once been admitted behind the ſcenes? In the wonders of nature, however, it rarely happens that we can diſcover ſo clearly this connecting chain. With regard to a few even of them, indeed, we ſeem to have been really admitted behind the ſcenes, and our Wonder accordingly is entirely at an end. Thus the eclipſes of the ſun and moon, which once, more

more than all the other appearances in the heavens, excited the terror and amazement of mankind, ſeem now no longer to be wonderful, ſince the connecting chain has been found out which joins them to the ordinary courſe of things. Nay, in thoſe caſes in which we have been leſs ſucceſsful, even the vague hypotheſes of Des Cartes, and the yet more indetermined notions of Ariſtotle, have, with their followers, contributed to give ſome coherence to the appearances of nature, and might diminiſh, though they could not deſtroy, their Wonder. If they did not completely fill up the interval betwixt the two disjointed objects, they beſtowed upon them, however, ſome ſort of looſe connection which they wanted before.

That the imagination feels a real difficulty in paſſing along two events which follow one another in an uncommon order, may be confirmed by many obvious obſervations. If it attempts to attend beyond a certain time to a long ſeries of this kind, the continual efforts it is obliged to make, in order to paſs from one object to another, and thus follow the progreſs of the ſucceſſion, ſoon fatigue it, and if repeated too often, diſorder and disjoint its whole frame. It is thus that too ſevere an application to ſtudy ſometimes brings on lunacy and frenzy, in thoſe eſpecially who are ſomewhat advanced in life, but whoſe imaginations, from being

SECT. II. being too late in applying, have not got those habits which dispose them to follow easily the reasonings in the abstract sciences. Every step of a demonstration, which to an old practitioner is quite natural and easy, requires from them the most intense application of thought.

Spurred on, however, either by ambition, or by admiration for the subject, they still continue till they become, first confused, then giddy, and at last distracted. Could we conceive a person of the soundest judgment, who had grown up to maturity, and whose imagination had acquired those habits, and that mold, which the constitution of things in this world necessarily impress upon it, to be all at once transported alive to some other planet, where nature was governed by laws quite different from those which take place here; as he would be continually obliged to attend to events, which must to him appear in the highest degree jarring, irregular, and discordant, he would soon feel the same confusion and giddiness begin to come upon him, which would at last end in the same manner, in lunacy and distraction. Neither, to produce this effect, is it necessary that the objects should be either great or interesting, or even uncommon, in themselves. It is sufficient that they follow one another in an uncommon order. Let any one attempt to look over even a game of cards, and to attend particularly

larly to every ſingle ſtroke, and if he is unacquainted with the nature and rules of the game; that is, with the laws which regulate the ſucceſſion of the cards; he will ſoon feel the ſame confuſion and giddineſs begin to come upon him, which, were it to be continued for days and months, would end in the ſame manner, in lunacy and diſtraction. But if the mind be thus thrown into the moſt violent diſorder, when it attends to a long ſeries of events which follow one another in an uncommon train, it muſt feel ſome degree of the ſame diſorder, when it obſerves even a ſingle event fall out in this unuſual manner: for the violent diſorder can ariſe from nothing but the too frequent repetition of this ſmaller uneaſineſs.

That it is the unuſualneſs alone of the ſucceſſion which occaſions this ſtop and interruption in the progreſs of the imagination as well as the notion of an interval betwixt the two immediately ſucceeding objects, to be filled up by ſome chain of intermediate events, is not leſs evident. The ſame orders of ſucceſſion, which to one ſet of men ſeem quite according to the natural courſe of things, and ſuch as require no intermediate events to join them, ſhall to another appear altogether incoherent and disjointed, unleſs ſome ſuch events be ſuppoſed: and this for no other reaſon, but becauſe ſuch orders of ſucceſſion are familiar

to

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to the one, and ſtrange to the other. When we enter the work-houſes of the moſt common artizans; ſuch as dyers, brewers, diſtillers; we obſerve a number of appearances, which preſent themſelves in an order that ſeems to us very ſtrange and wonderful. Our thought cannot eaſily follow it, we feel an interval betwixt every two of them, and require ſome chain of intermediate events, to fill it up, and link them together. But the artizan himſelf, who has been for many years familiar with the conſequences of all the operations of his art, feels no ſuch interval. They fall in with what cuſtom has made the natural movement of his imagination: they no longer excite his Wonder, and if he is not a genius ſuperior to his profeſſion, ſo as to be capable of making the very eaſy reflection, that thoſe things, though familiar to him, may be ſtrange to us, he will be diſpoſed rather to laugh at, than ſympathize with our Wonder. He cannot conceive what occaſion there is for any connecting events to unite thoſe appearances, which ſeem to him to ſucceed each other very naturally. It is their nature, he tells us, to follow one another in this order, and that accordingly they always do ſo. In the ſame manner bread has, ſince the world began, been the common nouriſhment of the human body, and men have ſo long ſeen it, every day, converted into fleſh and bones, ſubſtances in all reſpects ſo unlike it,

it, that they have ſeldom had the curioſity to inquire by what proceſs of intermediate events this change is brought about. Becauſe the paſſage of the thought from the one object to the other is by cuſtom become quite ſmooth and eaſy, almoſt without the ſuppoſition of any ſuch proceſs. Philoſophers, indeed, who often look for a chain of inviſible objects to join together two events that occur in an order familiar to all the world, have endeavoured to find out a chain of this kind betwixt the two events I have juſt now mentioned; in the ſame manner as they have endeavoured, by a like intermediate chain, to connect the gravity, the elaſticity, and even the coheſion of natural bodies, with ſome of their other qualities. Theſe, however, are all of them ſuch combinations of events as give no ſtop to the imaginations of the bulk of mankind, as excite no Wonder, nor any apprehenſion that there is wanting the ſtricteſt connection between them. But as in thoſe ſounds, which to the greater part of men ſeem perfectly agreeable to meaſure and harmony, the nicer ear of a muſician will diſcover a want, both of the moſt exact time, and of the moſt perfect coincidence: ſo the more practiſed thought of a philoſopher, who has ſpent his whole life in the ſtudy of the connecting principles of nature, will often feel an interval betwixt two objects, which, to more careleſs obſervers, ſeem very ſtrictly con-

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conjoined. By long attention to all the connections which have ever been presented to his observation, by having often compared them with one another, he has, like the musician, acquired, if one may say so, a nicer ear, and a more delicate feeling with regard to things of this nature. And as to the one, that music seems dissonance which falls short of the most perfect harmony; so to the other, those events seem altogether separated and disjoined, which fall short of the strictest and most perfect connection.

Philosophy is the science of the connecting principles of nature. Nature, after the largest experience that common observation can acquire, seems to abound with events which appear solitary and incoherent with all that go before them, which therefore disturb the easy movement of the imagination; which makes its ideas succeed each other, if one may say so, by irregular starts and sallies; and which thus tend, in some measure, to introduce those confusions and distractions we formerly mentioned. Philosophy, by representing the invisible chains which bind together all these disjointed objects, endeavours to introduce order into this chaos of jarring and discordant appearances, to allay this tumult of the imagination, and to restore it, when it surveys the great revolutions of the universe, to that tone of tranquillity and composure, which

which is both moſt agreeable in itſelf, and moſt ſuitable to its nature. Philoſophy, therefore, may be regarded as one of thoſe arts which addreſs themſelves to the imagination; and whoſe theory and hiſtory, upon that account, fall properly within the circumference of our ſubject. Let us endeavour to trace it, from its firſt origin, up to that ſummit of perfection to which it is at preſent ſuppoſed to have arrived, and to which, indeed, it has equally been ſuppoſed to have arrived in almoſt all former times. It is the moſt ſublime of all the agreeable arts, and its revolutions have been the greateſt, the moſt frequent, and the moſt diſtinguiſhed of all thoſe that have happened in the literary world. Its hiſtory, therefore, muſt, upon all accounts, be the moſt entertaining and the moſt inſtructive. Let us examine, therefore, all the different ſyſtems of nature, which, in theſe weſtern parts of the world, the only parts of whoſe hiſtory we know any thing, have ſucceſſively been adopted by the learned and ingenious; and, without regarding their abſurdity or probability, their agreement or inconſiſtency with truth and reality, let us conſider them only in that particular point of view which belongs to our ſubject; and content ourſelves with inquiring how far each of them was fitted to ſooth the imagination, and to render the theatre of nature a more coherent, and therefore a more

T. magnificent ſpectacle, t it would have appeared to be. Acc li ey have failed or ſucceeded in t , they have conſtantly failed or ſucceed d in gaining reputation and renown to their authors; and this will be found to be the clew that is moſt capable of conducting us through all the labyrinths of philoſophical hiſtory: for, in the mean time, it will ſerve to confirm what has gone before, and to throw light upon what is to come after, that we obſerve, in general, that no ſyſtem, how well ſoever in other reſpects ſupported, has ever been able to gain any general credit on the world, whoſe connecting principles were not ſuch as were familiar to all mankind. Why has the chemical philoſophy in all ages crept along in obſcurity, and been ſo diſregarded by the generality of mankind, while other ſyſtems, leſs uſeful, d not more agreeable to experience, have offeſſed univerſal admiration for whole centur es together? The connecting principles of the chemical philoſophy are ſuch as the generality of mankind know nothing about, have rarely ſeen, and have never been ac nted with; and which to them, therefore, e i ble of ſmoothing the paſſage of t i gination betwixt any two ſeemingly diſjointed objects. Salts, ſulphurs, and mercuries, acids, and alkalis, are principles which can ſmooth t thoſe only who live about the furn ; whoſe

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moſt common operations ſeem, to the bulk of mankind, as disjointed as any two events which the chemiſts would connect together by them. Thoſe artiſts, however, naturally explained things to themſelves by principles that were familiar to themſelves. As Ariſtotle obſerves, that the early Pythagoreans, who firſt ſtudied arithmetic, explained all things by the properties of numbers; and Cicero tells us, that Ariſtoxenus, the muſician, found the nature of the ſoul to conſiſt in harmony. In the ſame manner, a learned phyſician lately gave a ſyſtem of moral philoſophy upon the principles of his own art, in which wiſdom and virtue were the healthful ſtate of the ſoul; the different vices and follies, the different diſeaſes to which it was ſubject; in which the cauſes and ſymptoms of thoſe diſeaſes were aſcertained; and, in the ſame medical ſtrain, a proper method of cure preſcribed. In the ſame manner alſo, others have written parallels of painting and poetry, of poetry and muſic, of muſic and architecture, of beauty and virtue, of all the fine arts; ſyſtems which have univerſally owed their origin to the lucubrations of thoſe who were acquainted with the one art, but ignorant of the other; who therefore explained to themſelves the phænomena, in that which was ſtrange to them, by thoſe in that which was familiar; and with whom, upon that account, the analogy, which in

SECT. II. other writers gives occaſion to a few ingenious ſimilitudes, became the great hinge upon which every thing turned.

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Of the Origin of Philoſophy.

SECT. III. MANKIND, in the firſt ages of ſociety, before the eſtabliſhment of law, order, and ſecurity, have little curioſity to find out thoſe hidden chains of events which bind together the ſeemingly disjointed appearances of nature. A ſavage, whoſe ſubſiſtence is precarious, whoſe life is every day expoſed to the rudeſt dangers, has no inclination to amuſe himſelf with ſearching out what, when diſcovered, ſeems to ſerve no other purpoſe than to render the theatre of nature a more connected ſpectacle to his imagination. Many of theſe ſmaller incoherences, which in the courſe of things perplex philoſophers, entirely eſcape his attention. Thoſe more magnificent irregularities, whoſe grandeur he cannot overlook, call forth his amazement. Comets, eclipſes, thunder, lightning, and other meteors, by their greatneſs, naturally overawe him, and he views them with a reverence that approaches to

to fear. His inexperience and uncertainty with regard to every thing about them, how they came, how they are to go, what went before, what is to come after them, exasperate his sentiment into terror and consternation. But our passions, as Father Malbranche observes, all justify themselves; that is, suggest to us opinions which justify them. As those appearances terrify him, therefore, he is disposed to believe every thing about them which can render them still more the objects of his terror. That they proceed from some intelligent, though invisible causes, of whose vengeance and displeasure they are either the signs or the effects, is the notion of all others most capable of enhancing this passion, and is that, therefore, which he is most apt to entertain. To this too, that cowardice and pusillanimity, so natural to man in his uncivilized state, still more disposes him; unprotected by the laws of society, exposed, defenceless, he feels his weakness upon all occasions; his strength and security upon none.

But all the irregularities of nature are not of this awful or terrible kind. Some of them are perfectly beautiful and agreeable. These, therefore, from the same impotence of mind, would be beheld with love and complacency, and even with transports of gratitude; for whatever is the cause of pleasure naturally excites our gratitude. A child caresses the

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fruit that is agreeable to it, as it beats the stone that hurts it. The notions of a savage are not very different. The ancient Athenians, who solemnly punished the axe which had accidentally been the cause of the death of a man, erected altars, and offered sacrifices to the rainbow. Sentiments not unlike these, may sometimes, upon such occasions, begin to be felt even in the breasts of the most civilized, but are presently checked by the reflection, that the things are not their proper objects. But a savage, whose notions are guided altogether by wild nature and passion, waits for no other proof that a thing is the proper object of any sentiment, than that it excites it. The reverence and gratitude, with which some of the appearances of nature inspire him, convince him that they are the proper objects of reverence and gratitude, and therefore proceed from some intelligent beings, who take pleasure in the expressions of those sentiments. With him, therefore, every object of nature, which by its beauty or greatness, its utility or hurtfulness, is considerable enough to attract his attention, and whose operations are not perfectly regular, is supposed to act by the direction of some invisible and designing power. The sea is spread out into a calm, or heaved into a storm, according to the good pleasure of Neptune. Does the earth pour forth an exuberant harvest? It is owing

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to the indulgence of Ceres. Does the vine yield a plentiful vintage? It flows from the bounty of Bacchus. Do either refuſe their preſents? It is aſcribed to the diſpleaſure of thoſe offended deities. The tree which now flouriſhes and now decays, is inhabited by a Dryad, upon whoſe health or ſickneſs its various appearances depend. The fountain, which ſometimes flows in a copious, and ſometimes in a ſcanty ſtream, which appears ſometimes clear and limpid, and at other times muddy and diſturbed, is affected in all its changes by the Naiad who dwells within it. Hence the origin of Polytheiſm, and of that vulgar ſuperſtition which aſcribes all the irregular events of nature to the favour or diſpleaſure of intelligent, though inviſible beings, to gods, dæmons, witches, genii, fairies. For it may be obſerved, that in all polytheiſtic religions, among ſavages, as well as in the early ages of heathen antiquity, it is the irregular events of nature only that are aſcribed to the agency and power of their gods. Fire burns, and water refreſhes; heavy bodies deſcend, and lighter ſubſtances fly upwards, by the neceſſity of their own nature; nor was the inviſible hand of Jupiter ever apprehended to be employed in thoſe matters. But thunder and lightning, ſtorms and ſunſhine, thoſe more irregular events, were aſcribed to his favour, or his anger. Man, the only deſigning power with

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which they were acquainted, never acts but either to ſtop or to alter the courſe which natural events would take, if left to themſelves. Thoſe other intelligent beings, whom they imagined, but knew not, were naturally ſuppoſed to act in the ſame manner; not to employ themſelves in ſupporting the ordinary courſe of things, which went on of its own accord, but to ſtop, to thwart, and to diſturb it. And thus, in the firſt ages of the world, the loweſt and moſt puſillanimous ſuperſtition ſupplied the place of philoſophy.

But when law has eſtabliſhed order and ſecurity, and ſubſiſtence ceaſes to be precarious, the curioſity of mankind is increaſed, and their fears are diminiſhed. The leiſure which they then enjoy renders them more attentive to the appearances of nature, more obſervant of her ſmalleſt irregularities, and more deſirous to know what is the chain which links them altogether. That ſome ſuch chain ſubſiſts betwixt all her ſeemingly disjointed phœnomena, they are neceſſarily led to conceive; and that magnanimity, and cheerfulneſs, which all generous natures acquire who are bred in civilized ſocieties, where they have ſo few occaſions to feel their weakneſs, and ſo many to be conſcious of their ſtrength and ſecurity, renders them leſs diſpoſed to employ, for this connecting chain, thoſe inviſible beings whom the fear and ignorance of their

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rude forefathers had engendered. Thofe of liberal fortunes, whofe attention is not much occupied either with bufinefs or with pleafure, can fill up the void of their imagination, which is thus difengaged from the ordinary affairs of life, no other way than by attending to that train of events which paffes around them. While the great objects of nature thus pafs in review before them, many things occur in an order to which they have not been accuftomed. Their imagination, which accompanies with eafe and delight the regular progrefs of nature, is ftopped and embarraffed by thofe feeming incoherences; they excite their wonder, and feem to require fome chain of intermediate events, which, by connecting them with fomething that has gone before, may thus render the whole courfe of the univerfe confiftent and of a piece. Wonder, therefore, and not any expectation of advantage from its difcoveries, is the firft principle which prompts mankind to the ftudy of Philofophy, of that fcience which pretends to lay open the concealed connections that unite the various appearances of nature; and they purfue this ftudy for its own fake, as an original pleafure or good in itfelf, without regarding its tendency to procure them the means of many other pleafures.

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Greece, and the Greek colonies in Sicily, Italy, and the Leffer Afia, were the firft countries

SECT. III. countries which, in these western parts of the world, arrived at a state of civilized society. It was in them, therefore, that the first philosophers, of whose doctrine we have any distinct account, appeared. Law and order seem indeed to have been established in the great monarchies of Asia and Egypt, long before they had any footing in Greece; yet, after all that has been said concerning the learning of the Chaldeans and Egyptians, whether there ever was in those nations any thing which deserved the name of science, or whether that despotism which is more destructive of security and leisure than anarchy itself, and which prevailed over all the East, prevented the growth of Philosophy, is a question which, for want of monuments, cannot be determined with any degree of precision.

The Greek colonies having been settled amid nations either altogether barbarous, or altogether unwarlike, over whom, therefore, they soon acquired a very great authority, seem, upon that account, to have arrived at a considerable degree of empire and opulence before any state in the parent country had surmounted that extreme poverty, which, by leaving no room for any evident distinction of ranks, is necessarily attended with the confusion and misrule which flows from a want of all regular subordination. The Greek islands being

being ſecure from the invaſion of land armies, or from naval forces, which were in thoſe days but little known, ſeem, upon that account too, to have got before the continent in all ſorts of civility and improvement. The firſt philoſophers, therefore, as well as the firſt poets, ſeem all to have been natives, either of their colonies, or of their iſlands. It was from thence that Homer, Archilochus, Steſichorus, Simonides, Sappho, Anacreon, derived their birth. Thales and Pythagoras, the founders of the two earlieſt ſects of philoſophy, aroſe, the one in an Aſiatic colony, the other in an iſland; and neither of them eſtabliſhed his ſchool in the mother country.

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What was the particular ſyſtem of either of thoſe two philoſophers, or whether their doctrine was ſo methodized as to deſerve the name of a ſyſtem, the imperfection, as well as the uncertainty of all the traditions that have come down to us concerning them, makes it impoſſible to determine. The ſchool of Pythagoras, however, ſeems to have advanced further in the ſtudy of the connecting principles of nature, than that of the Ionian philoſopher. The accounts which are given of Anaximander, Anaximenes, Anaxagoras, Archelaus, the ſucceſſors of Thales, repreſent the doctrines of thoſe ſages as full of the moſt inextricable confuſion. Something, however, that approaches to a compoſed and orderly ſyſtem,

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ſyſtem, may be traced in what is delivered down to us concerning the doctrine of Empedocles, of Archytas, of Timæus, and of Ocellus the Lucanian, the moſt renowned philoſophers of the Italian ſchool. The opinions of the two laſt coincide pretty much; the one, with thoſe of Plato; the other, with thoſe of Ariſtotle; nor do thoſe of the two firſt ſeem to have been very different, of whom the one was the author of the doctrine of the Four Elements, the other the inventor of the Categories; who, therefore, may be regarded as the founders, the one, of the ancient Phyſics; the other, of the ancient Dialectic; and, how cloſely theſe were connected will appear hereafter. It was in the ſchool of Socrates, however, from Plato and Ariſtotle, that Philoſophy firſt received that form, which introduced her, if one may ſay ſo, to the general acquaintance of the world. It is from them, therefore, that we ſhall begin to give her hiſtory in any detail. Whatever was valuable in the former ſyſtems, which was at all conſiſtent with their general principles, they ſeem to have conſolidated into their own. From the Ionian philoſophy, I have not been able to diſcover that they derived any thing. From the Pythagorean ſchool, both Plato and Ariſtotle ſeem to have derived the fundamental principles of almoſt all their doctrines. Plato, too, appears to have borrowed ſomething from

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two other ſects of philoſophers, whoſe extreme obſcurity ſeems to have prevented them from acquiring themſelves any extenſive reputation; the one was that of Cratylus and Heraclitus; the other was that of Xenophanes, Parmenides, Meliſſus, and Zeno. To pretend to reſcue the ſyſtem of any of thoſe anteſocratic ſages, from that oblivion which at preſent covers them all, would be a vain and uſeleſs attempt. What ſeems, however, to have been borrowed from them, ſhall ſometimes be marked as we go along.

There was ſtill another ſchool of philoſophy, earlier than Plato, from which, however, he was ſo far from borrowing any thing, that he ſeems to have bent the whole force of his reaſon to diſcredit and expoſe its principles. This was the philoſophy of Leucippus, Democritus and Protagoras, which accordingly ſeems to have ſubmitted to his eloquence, to have lain dormant, and to have been almoſt forgotten for ſome generations, till it was afterwards more ſucceſsfully revived by Epicurus.

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The History of Astronomy.

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OF all the phœnomena of nature, the celestial appearances are, by their greatness and beauty, the most universal objects of the curiosity of mankind. Those who surveyed the heavens with the most careless attention, necessarily distinguished in them three different sorts of objects; the Sun, the Moon, and the Stars. These last, appearing always in the same situation, and at the same distance with regard to one another, and seeming to revolve every day round the earth in parallel circles, which widened gradually from the poles to the equator, were naturally thought to have all the marks of being fixed, like so many gems, in the concave side of the firmament, and of being carried round by the diurnal revolutions of that solid body: for the azure sky, in which the stars seem to float, was readily apprehended, upon account of the uniformity of their apparent motions, to be a solid body, the roof or outer wall of the universe, to whose inside all those little sparkling objects were attached.

The Sun and Moon, often changing their distance and situation, in regard to the other heavenly

heavenly bodies, could not be apprehended to be attached to the ſame ſphere with them. They aſſigned, therefore, to each of them, a ſphere of its own; that is, ſuppoſed each of them to be attached to the concave ſide of a ſolid and tranſparent body, by whoſe revolutions they were carried round the earth. There was not indeed, in this caſe, the ſame ground for the ſuppoſition of ſuch ſphere as in that of the Fixed Stars; for neither the Sun nor the Moon appear to keep always at the ſame diſtance with regard to any one of the other heavenly bodies. But as the motion of the Stars had been accounted for by an hypotheſis of this kind, it rendered the theory of the heavens more uniform, to account for that of the Sun and Moon in the ſame manner. The ſphere of the Sun they placed above that of the Moon; as the Moon was evidently ſeen in eclipſes to paſs betwixt the Sun and the Earth. Each of them was ſuppoſed to revolve by a motion of its own, and at the ſame time to be affected by the motion of the Fixed Stars. Thus, the Sun was carried round from eaſt to weſt by the communicated movement of this outer ſphere, which produced his diurnal revolutions, and the viciſſitudes of day and night; but at the ſame time he had a motion of his own, contrary to this, from weſt to eaſt, which occaſioned his annual revolution, and the continual ſhifting

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of his place with regard to the Fixed Stars. This motion was more eaſy, they thought, when carried on edgeways, and not in direct oppoſition to the motion of the outer ſphere; which occaſioned the inclination of the axis of the ſphere of the Sun, to that of the ſphere of the Fixed Stars; this again produced the obliquity of the ecliptic, and the conſequent changes of the ſeaſons. The moon, being placed below the ſphere of the Sun, had both a ſhorter courſe to finiſh, and was leſs obſtructed by the contrary movement of the ſphere of the Fixed Stars, from which ſhe was farther removed. She finiſhed her period, therefore, in a ſhorter time, and required but a month, inſtead of a year, to complete it.

The Stars, when more attentively ſurveyed, were ſome of them obſerved to be leſs conſtant and uniform in their motions than the reſt, and to change their ſituations with regard to the other heavenly bodies; moving generally eaſtwards, yet appearing ſometimes to ſtand ſtill, and ſometimes even to move weſtwards. Theſe, to the number of five, were diſtinguiſhed by the name of Planets, or wandering Stars, and marked with the particular appellations of Saturn, Jupiter, Mars, Venus, and Mercury. As, like the Sun and Moon, they ſeem to accompany the motion of the Fixed Stars from eaſt to weſt, but at the ſame time

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to have a motion of their own, which is generally from weſt to eaſt; they were each of them, as well as thoſe two great lamps of heaven, apprehended to be attached to the inſide of a ſolid concave and tranſparent ſphere, which had a revolution of its own, that was almoſt directly contrary to the revolution of the outer heaven, but which, at the ſame time, was hurried along by the ſuperior violence and rapidity of this laſt.

This is the ſyſtem of concentric Spheres, the firſt regular ſyſtem of Aſtronomy, which the world beheld, as it was taught in the Italian ſchool before Ariſtotle, and his two cotemporary philoſophers, Eudoxus and Callippus, had given it all the perfection which it is capable of receiving. Though rude and inartificial, it is capable of connecting together, in the imagination, the grandeſt and the moſt ſeemingly disjointed appearances in the heavens. The motions of the moſt remarkable objects in the celeſtial regions, the Sun, the Moon, the Fixed Stars, are ſufficiently connected with one another by this hypotheſis. The eclipſes of theſe two great luminaries are, though not ſo eaſily calculated, as eaſily explained, upon this ancient, as upon the modern ſyſtem. When theſe early philoſophers explained to their diſciples the very ſimple cauſes of thoſe dreadful phœnomena, it was under the ſeal of the moſt

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ſacred ſecrecy, that they might avoid the fury of the people, and not incur the imputation of impiety, when they thus took from the gods the direction of thoſe events, which were apprehended to be the moſt terrible tokens of their impending vengeance. The obliquity of the ecliptic, the conſequent changes of the ſeaſons, the viciſſitudes of day and night, and the different lengths of both days and nights, in the different ſeaſons, correſpond too, pretty exactly, with this ancient doctrine. And if there had been no other bodies diſcoverable in the heavens, beſides the Sun, the Moon, and the Fixed Stars, this old hypotheſis might have ſtood the examination of all ages, and have gone down triumphant to the remoteſt poſterity.

If it gained the belief of mankind by its plauſibility, it attracted their wonder and admiration; ſentiments that ſtill more confirmed their belief, by the novelty and beauty of that view of nature which it preſented to the imagination. Before this ſyſtem was taught in the world, the earth was regarded as, what it appears to the eye, a vaſt, rough, and irregular plain, the baſis and foundation of the univerſe, ſurrounded on all ſides by the ocean, and whoſe roots extended themſelves through the whole of that infinite depth which is below it. The ſky was conſidered as a ſolid hemiſphere, which covered the

the earth, and united with the ocean at the extremity of the horizon. The Sun, the Moon, and all the heavenly bodies rose out of the eastern, climbed up the convex side of the heavens, and descended again into the western ocean, and from thence, by some subterraneous passages, returned to their first chambers in the east. Nor was this notion confined to the people, or to the poets who painted the opinions of the people: it was held by Xenophanes, the founder of the Eleatic philosophy, after that of the Ionian and Italian schools, the earliest that appeared in Greece. Thales of Miletus too, who, according to Aristotle, represented the Earth as floating upon an immense ocean of water, may have been nearly of the same opinion; notwithstanding what we are told by Plutarch and Apuleius concerning his astronomical discoveries, all of which must plainly have been of a much later date. To those who had no other idea of nature, besides what they derived from so confused an account of things, how agreeable must that system have appeared, which represented the Earth as distinguished into land and water, self-balanced and suspended in the centre of the universe, surrounded by the elements of Air and Ether, and covered by eight polished and cristalline Spheres, each of which was distinguished by one or more beautiful and

T. luminous bodies, and all of which revolved round their common centre, by varied, but by equable and proportionable motions. It ſeems to have been the beauty of this ſyſtem that gave Plato the notion of ſomething like an harmonic proportion, to be diſcovered in the motions and diſtances of the heavenly bodies; and which ſuggeſted to the earlier Pythagoreans, the celebrated fancy of the Muſick of the Spheres; a wild and romantic idea, yet ſuch as does not ill correſpond with that admiration, which ſo beautiful a ſyſtem, recommended too by the graces of novelty, is apt to inſpire.

Whatever are the defects which this account of things labours under, they are ſuch, as to the firſt obſervers of the heavens could not readily occur. If all the motions of the Five Planets cannot, the greater part of them may, be eaſily connected by it; they and all their motions are the leaſt remarkable objects in the heavens; the greater part of mankind take no notice of them at all; and a ſyſtem, whoſe only defect lies in the account which it gives of them, cannot thereby be much diſgraced in their opinion. If ſome of the appearances too of the Sun and Moon, the ſometimes accelerated and again retarded motions of thoſe luminaries but ill correſpond with it; theſe, too, are ſuch as cannot be diſcovered but by the moſt attentive obſerva-

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tion, and ſuch therefore as we cannot wonder that the imaginations of the firſt enquirers ſhould ſlur over, if one may ſay ſo, and take little notice of. SECT. IV.

It was, however, to remedy thoſe defects, that Eudoxus, the friend and auditor of Plato, found it neceſſary to increaſe the number of the Celeſtial Spheres. Each Planet is ſometimes obſerved to advance forward in that eaſtern courſe which is peculiar to itſelf, ſometimes to retire backwards, and ſometimes again to ſtand ſtill. To ſuppoſe that the Sphere of the Planet ſhould by its own motion, if one may ſay ſo, ſometimes roll forwards, ſometimes roll backwards, and ſometimes do neither the one nor the other, is contrary to all the natural propenſities of the imagination, which accompanies with eaſe and delight any regular and orderly motion, but feels itſelf perpetually ſtopped and interrupted, when it endeavours to attend to one ſo deſultory and uncertain. It would purſue, naturally and of its own accord, the direct or progreſſive movement of the Sphere, but is every now and then ſhocked, if one may ſay ſo, and turned violently out of its natural career by the retrograde and ſtationary appearances of the Planet, betwixt which and its more uſual motion, the fancy feels a want of connection, a gap or interval, which it cannot fill up, but by ſuppoſing ſome chain of intermediate

T. events to join them. The hypothesis of a number of other spheres revolving in the heavens, besides those in which the luminous bodies themselves were infixed, was the chain with which Eudoxus endeavoured to supply it. He bestowed four of these Spheres upon each of the Five Planets; one in which the luminous body itself revolved, and three others above it. Each of these had a regular and constant, but a peculiar movement of its own, which it communicated to what was properly the Sphere of the Planet, and thus occasioned that diversity of motions observable in those bodies. One of these Spheres, for example, had an oscillatory motion, like the circular pendulum of a watch. As when you turn round a watch, like a Sphere upon its axis, the pendulum will, while turned round along with it, still continue to oscillate, and communicate to whatever body is comprehended within it, both its own oscillations and the circular motion of the watch; so this oscillating Sphere, being itself turned round by the motion of the Sphere above it, communicated to the Sphere below it, that circular, as well as its own oscillatory motion; produced by the one, the daily revolutions: by the other, the direct, stationary, and retrograde appearances of the Planet, which derived from a third Sphere that revolution by which it performed its annual period. The motions

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of all these Spheres were in themselves constant and equable, such as the imagination could easily attend to and pursue, and which connected together that otherwise incoherent diversity of movements observable in the Sphere of the Planet. The motions of the Sun and Moon being more regular than those of the Five Planets, by assigning three Spheres to each of them, Eudoxus imagined he could connect together all the diversity of movements discoverable in either. The motion of the Fixed Stars being perfectly regular, one Sphere he judged sufficient for them all. So that, according to this account, the whole number of Celestial Spheres amounted to twenty-seven. Callippus, though somewhat younger, the cotemporary of Eudoxus, found that even this number was not enough to connect together the vast variety of movements which he discovered in those bodies, and therefore increased it to thirty-four. Aristotle, upon a yet more attentive observation, found that even all these Spheres would not be sufficient, and therefore added twenty-two more, which increased their number to fifty-six. Later observers discovered still new motions, and new inequalities, in the heavens. New Spheres were therefore still to be added to the system, and some of them to be placed even above that of the Fixed Stars. So that in the sixteenth century, when Fracostorio,

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ſmit with the eloquence of Plato and Ariſtotle, and with the regularity and harmony of their ſyſtem, in itſelf perfectly beautiful, though it correſponds but inaccurately with the phænomena, endeavoured to revive this ancient Aſtronomy, which had long given place to that of Ptolemy and Hipparchus, he found it neceſſary to multiply the number of Celeſtial Spheres to ſeventy-two; neither were all theſe enough.

This ſyſtem had now become as intricate and complex as thoſe appearances themſelves, which it had been invented to render uniform and coherent. The imagination, therefore, found itſelf but little relieved from that embarraſſment, into which thoſe appearances had thrown it, by ſo perplexed an account of things. Another ſyſtem, for this reaſon, not long after the days of Ariſtotle, was invented by Apollonius, which was afterwards perfected by Hipparchus, and has ſince been delivered down to us by Ptolemy, the more artificial ſyſtem of Eccentric Spheres and Epicycles.

In this ſyſtem, they firſt diſtinguiſhed betwixt the real and apparent motion of the heavenly bodies. Theſe, they obſerved, upon account of their immenſe diſtance, muſt neceſſarily appear to revolve in circles concentric with the globe of the Earth, and with one another: but that we cannot, therefore, be certain

certain that they really revolve in ſuch circles, ſince, though they did not, they would ſtill have the ſame appearance. By ſuppoſing, therefore, that the Sun and the other Planets revolved in circles, whoſe centres were very diſtant from the centre of the Earth; that conſequently, in the progreſs of their revolution, they muſt ſometimes approach nearer, and ſometimes recede further from it, and muſt, therefore, to its inhabitants appear to move faſter in the one caſe, and ſlower in the other, thoſe philoſophers imagined they could account for the apparently unequal velocities of all thoſe bodies.

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By ſuppoſing, that in the ſolidity of the Sphere of each of the Five Planets there was formed another little Sphere, called an Epicycle, which revolved round its own centre, at the ſame time that it was carried round the centre of the Earth by the revolution of the great Sphere, betwixt whoſe concave and convex ſides it was incloſed; in the ſame manner as we might ſuppoſe a little wheel incloſed within the outer circle of a great wheel, and which whirled about ſeveral times upon its own axis, while its centre was carried round the axis of the great wheel, they imagined they could account for the retrograde and ſtationary appearances of thoſe moſt irregular objects in the heavens. The Planet, they ſuppoſed, was attached to the circumference,

T. ference, and whirled round the centre of this little Sphere, at the ſame time that it was carried round the earth by the movement of the great Sphere. The revolution of this little Sphere, or Epicycle, was ſuch, that the Planet, when in the upper part of it; that is, when furtheſt off and leaſt ſenſible to the eye; was carried round in the ſame direction with the centre of the Epicycle, or with the Sphere in which the Epicycle was incloſed: but when in the lower part, that is, when neareſt and moſt ſenſible to the eye; it was carried round a direction contrary to that of the centre of the Epicycle: in the ſame manner as every point in the upper part of the outer circle of a coach-wheel revolves forward in the ſame direction with the axis, while every point, in the lower part, revolves backwards in a contrary direction to the axis. The motions of the Planet, therefore, ſurveyed from the Earth, appeared direct, when in the upper part of the Epicycle, and retrograde, when in the lower. When again it either deſcended from the upper part to the lower, or aſcended from the lower to the upper, it neceſſarily appeared ſtationary.

But, though, by the eccentricity of the great Sphere, they were thus able, in ſome meaſure, to connect together the unequal velocities of the heavenly bodies, and by the revolutions of the little Sphere, the direct, ſtationary,

ſtationary, and retrograde appearances of the Planets, there was another difficulty that ſtill remained. Neither the Moon, nor the three ſuperior Planets, appear always in the ſame part of the heavens, when at their periods of moſt retarded motion, or when they are ſuppoſed to be at the greateſt diſtance from the Earth. The apogeum therefore, or the point of greateſt diſtance from the Earth, in the Spheres of each of thoſe bodies, muſt have a movement of its own, which may carry it ſucceſſively through all the different points of the Ecliptic. They ſuppoſed, therefore, that while the great eccentric Sphere revolved eaſtwards round its centre, that its centre too revolved weſtwards in a circle of its own, round the centre of the Earth, and thus carried its apogeum through all the different points of the Ecliptic.

But with all thoſe combined and perplexed circles; though the patrons of this ſyſtem were able to give ſome degree of uniformity to the real directions of the Planets, they found it impoſſible ſo to adjuſt the velocities of thoſe ſuppoſed Spheres to the phœnomena, as that the revolution of any one of them, when ſurveyed from its own centre, ſhould appear perfectly equable and uniform. From that point, the only point in which the velocity of what moves in a circle can be truly judged of, they would ſtill appear irregular and inconſtant,

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ſtant, and ſuch as tended to embarraſs and confound the imagination. They invented, therefore, for each of them, a new Circle, called the Equalizing Circle, from whoſe centre they ſhould all appear perfectly equable: that is, they ſo adjuſted the velocities of theſe Spheres, as that, though the revolution of each of them would appear irregular when ſurveyed from its own centre, there ſhould, however, be a point comprehended within its circumference, from whence its motions ſhould appear to cut off, in equal times, equal portions of the Circle, of which that point was the centre.

Nothing can more evidently ſhow, how much the repoſe and tranquillity of the imagination is the ultimate end of philoſophy, than the invention of this Equalizing Circle. The motions of the heavenly bodies had appeared inconſtant and irregular, both in their velocities and in their directions. They were ſuch, therefore, as tended to embarraſs and confound the imagination, whenever it attempted to trace them. The invention of Eccentric Spheres, of Epicycles, and of the revolution of the centres of the Eccentric Spheres, tended to allay this confuſion, to connect together thoſe disjointed appearances, and to introduce harmony and order into the mind's conception of the movements of thoſe bodies. It did this, however, but imperfectly; it

it introduced uniformity and coherence into their real directions. But their velocities, when ſurveyed from the only point in which the velocity of what moves in a Circle can be truly judged of, the centre of that Circle, ſtill remained, in ſome meaſure, inconſtant as before; and ſtill, therefore, embarraſſed the imagination. The mind found itſelf ſomewhat relieved from this embarraſſment, when it conceived, that how irregular ſoever the motions of each of thoſe Circles might appear, when ſurveyed from its own centre, there was, however, in each of them, a point, from whence its revolution would appear perfectly equable and uniform, and ſuch as the imagination could eaſily follow. Thoſe philoſophers tranſported themſelves, in fancy, to the centres of theſe imaginary Circles, and took pleaſure in ſurveying from thence, all thoſe fantaſtical motions, arranged, according to that harmony and order, which it had been the end of all their reſearches to beſtow upon them. Here, at laſt, they enjoyed that tranquillity and repoſe which they had purſued through all the mazes of this intricate hypotheſis; and here they beheld this, the moſt beautiful and magnificent part of the great theatre of nature, ſo diſpoſed and conſtructed, that they could attend, with eaſe and delight, to all the revolutions and changes that occurred in it.

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Thefe, the Syftem of Concentric, and that of Eccentric Spheres, feem to have been the two Syftems of Aftronomy, that had moft credit and reputation with that part of the ancient world, who applied themfelves particularly to the ftudy of the heavens. Cleanthes, however, and the other philofophers of the Stoical fect who came after him, appear to have had a fyftem of their own, quite different from either. But though juftly renowned for their fkill in dialectic, and for the fecurity and fublimity of their moral doctrines, thofe fages feem never to have had any high reputation for their knowledge of the heavens; neither is the name of any one of them ever counted in the catalogue of the great aftronomers, and ftudious obfervers of the Stars among the ancients. They rejected the doctrine of the Solid Spheres; and maintained, that the celeftial regions were filled with a fluid ether, of two yielding a nature to carry along with it, by any motion of its own, bodies fo immenfely great as the Sun, Moon, and Five Planets. Thefe, therefore, as well as the Fixed Stars, did not derive their motion from the circumambient body, but had each of them, in itfelf, and peculiar to itfelf, a vital principle of motion, which directed it to move with its own peculiar velocity, and its own peculiar direction. It was by this internal principle that the Fixed Stars revolved directly from eaft to

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weſt in circles parallel to the Equator, greater or leſs, according to their diſtance or nearneſs to the Poles, and with velocities ſo proportioned, that each of them finiſhed its diurnal period in the ſame time, in ſomething leſs than twenty-three hours and fifty-ſix minutes. It was, by a principle of the ſame kind, that the Sun moved weſtwards, for they allowed of no eaſtward motion in the heavens, but with leſs velocity than the Fixed Stars, ſo as to finiſh his diurnal period in twenty-four hours, and, conſequently, to fall every day behind them, by a ſpace of the heavens nearly equal to that which he paſſes over in four minutes; that is, nearly equal to a degree. This revolution of the Sun, too, was neither directly weſtwards, nor exactly circular; but after the Summer Solſtice, his motion began gradually to incline a little ſouthwards, appearing in his meridian to-day, further ſouth than yeſterday; and to-morrow ſtill further ſouth than to-day; and thus continuing every day to deſcribe a ſpiral line round the Earth, which carried him gradually further and further ſouthwards, till he arrived at the Winter Solſtice. Here this ſpiral line began to change its direction, and to bring him gradually, every day, further and further northwards, till it again reſtored him to the Summer Solſtice. In the ſame manner they accounted for the motion of the Moon, and that of the Five Planets, by ſuppoſing

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T. that each of them revolved weſtwards, but with directions and velocities, that were both different from one another, and continually varying; generally, however, in ſpherical lines, ſomewhat inclined to the Equator.

This ſyſtem ſeems never to have had the vogue. The ſyſtem of Concentric as well as that of Eccentric Spheres gives ſome ſort of reaſon, both for the conſtancy and equability of the motion of the Fixed Stars, and for the variety and uncertainty of that of the Planets. Each of them beſtow ſome ſort of coherence upon thoſe apparently disjointed phœnomena. But this other ſyſtem ſeems to leave them pretty much as it found them. Aſk a Stoic, why all the Fixed Stars perform their daily revolutions in circles parallel to each other, though of very different diameters, and with velocities ſo proportioned, that they all finiſh their period at the ſame time, and through the whole courſe of it preſerve the ſame diſtance and ſituation with regard to one another? He can give no other anſwer, but that the peculiar nature, or if one may ſay ſo, the caprice of each Star directs it to move in that peculiar manner. His ſyſtem affords him no principle of connection, by which he can join together, in his imagination, ſo great a number of harmonious revolutions. But either of the other two ſyſtems, by the ſuppoſition of the ſolid firmanent, affords this eaſily. He is equally

equally at a loſs to connect together the peculiarities that are obſerved in the motions of the other heavenly bodies; the ſpiral motion of them all; their alternate progreſſion from north to ſouth, and from ſouth to north; the ſometimes accelerated, and again retarded motions of the Sun and Moon; the direct retrograde and ſtationary appearances of the Planets. All theſe have, in his ſyſtem, no bond of union, but remain as looſe and incoherent in the fancy, as they at firſt appeared to the ſenſes, before philoſophy had attempted, by giving them a new arrangement, by placing them at different diſtances, by aſſigning to each ſome peculiar but regular principle of motion, to methodize and diſpoſe them into an order that ſhould enable the imagination to paſs as ſmoothly, and with as little embarraſſment, along them, as along the moſt regular, familiar, and coherent appearances of nature.

Such were the ſyſtems of Aſtronomy that, in the ancient world, appear to have been adopted by any conſiderable party. Of all of them, the ſyſtem of Eccentric Spheres was that which correſponded moſt exactly with the appearances of the heavens. It was not invented till after thoſe appearances had been obſerved, with ſome accuracy, for more than a century together; and it was not completely digeſted by Ptolemy till the reign of Antoni-

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tus, after a much longer course of observations. We cannot wonder, therefore, that it was adapted to a much greater number of the phœnomena, than either of the other two systems, which had been formed before those phœnomena were observed with any degree of attention, which, therefore, could connect them together only while they were thus regarded in the gross, but which, it could not be expected, should apply to them when they came to be considered in the detail. From the time of Hipparchus, therefore, this system seems to have been pretty generally received by all those who attended particularly to the study of the heavens. That astronomer first made a catalogue of the Fixed Stars; calculated, for six hundred years, the revolutions of the Sun, Moon, and Five Planets; marked the places in the heavens, in which, during all that period, each of those bodies should appear; ascertained the times of the eclipses of the Sun and Moon, and the particular places of the Earth in which they should be visible. His calculations were founded upon this system, and as the events corresponded to his predictions, with a degree of accuracy which, though inferior to what Astronomy has since arrived at, was greatly superior to any thing which the world had then known, they ascertained, to all astronomers and mathematicians, the preference of his system,

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above all thoſe which had been current before it.

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It was, however, to aſtronomers and mathematicans, only, that they aſcertained this; for, notwithſtanding the evident ſuperiority of this ſyſtem, to all thoſe with which the world was then acquainted, it was never adopted by one ſect of philoſophers.

Philoſophers, long before the days of Hipparchus, ſeem to have abandoned the ſtudy of nature, to employ themſelves chiefly in ethical, rhetorical, and dialectical queſtions. Each party of them too, had by this time completed their peculiar ſyſtem or theory of the univerſe, and no human conſideration could then have induced them to give up any part of it. That ſupercilious and ignorant contempt too, with which at this time they regarded all mathematicians, among whom they counted aſtronomers, ſeems even to have hindered them from enquiring ſo far into their doctrines as to know what opinions they held. Neither Cicero nor Seneca, who have ſo often occaſion to mention the ancient ſyſtems of Aſtronomy, take any notice of that of Hipparchus. His name is not to be found in the writings of Seneca. It is mentioned but once in thoſe of Cicero, in a letter to Atticus, but without any note of approbation, as a geographer, and not as an aſtronomer. Plutarch, when he counts up, in his ſecond book, concerning the opi-

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nions of philoſophers, all the ancient ſyſtems of Aſtronomy, never mentions this, the only tolerable one which was known in his time. Thoſe three authors, it ſeems, converſed only with the writings of philoſophers. The elder Pliny indeed, a man whoſe curioſity extended itſelf equally to every part of learning, deſcribes the ſyſtem of Hipparchus, and never mentions its author, which he has occaſion to do often, without ſome note of that high admiration which he had ſo juſtly conceived for his merit. Such profound ignorance in thoſe profeſſed inſtructors of mankind, with regard to ſo important a part of the learning of their own times, is ſo very remarkable, that I thought it deſerved to be taken notice of, even in this ſhort account of the revolutions of philoſophy.

Syſtems in many reſpects reſemble machines. A machine is a little ſyſtem, created to perform, as well as to connect together, in reality, thoſe different movements and effects which the artiſt has occaſion for. A ſyſtem is an imaginary machine invented to connect together in the fancy thoſe different movements and effects which are already in reality performed. The machines that are firſt invented to perform any particular movement are always the moſt complex, and ſucceeding artiſts generally diſcover that, with fewer wheels, with fewer principles of motion, than had

had originally been employed, the ſame effects may be more eaſily produced. The firſt ſyſtems, in the ſame manner, are always the moſt complex, and a particular connecting chain, or principle, is generally thought neceſſary to unite every two ſeemingly disjointed appearances: but it often happens, that one great connecting principle is afterwards found to be ſufficient to bind together all the diſcordant phœnomena that occur in a whole ſpecies of things. How many wheels are neceſſary to carry on the movements of this imaginary machine, the ſyſtem of Eccentric Spheres! The weſtward diurnal revolution of the Firmament, whoſe rapidity carries all the other heavenly bodies along with it, requires one. The periodical eaſtward revolutions of the Sun, Moon, and Five Planets, require, for each of thoſe bodies, another. Their differently accelerated and retarded motions require, that thoſe wheels, or circles, ſhould neither be concentric with the Firmament, nor with one another; which, more than any thing, ſeems to diſturb the harmony of the univerſe. The retrograde and ſtationary appearance of the Five Planets, as well as the extreme inconſtancy of the Moon's motion, require, for each of them, an Epicycle, another little wheel attached to the circumference of the great wheel, which ſtill more interrupts

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the uniformity of the ſyſtem. The motion of the apogeum of each of thoſe bodies requires, in each of them, ſtill another wheel, to carry the centres of their Eccentric Spheres round the centre of the Earth. And thus, this imaginary machine, though, perhaps, more ſimple, and certainly better adapted to the phœnomena than the Fifty-ſix Planetary Spheres of Ariſtotle, was ſtill too intricate and complex for the imagination to reſt in it with complete tranquillity and ſatisfaction.

It maintained its authority, however, without any diminution of reputation, as long as ſcience was at all regarded in the ancient world. After the reign of Antoninus, and, indeed, after the age of Hipparchus, who lived almoſt three hundred years before Antoninus, the great reputation which the earlier philoſophers had acquired, ſo impoſed upon the imaginations of mankind, that they ſeem to have deſpaired of ever equalling their renown. All human wiſdom, they ſuppoſed, was comprehended in the writings of thoſe elder ſages. To abridge, to explain, and to comment upon them, and thus ſhow themſelves, at leaſt, capable of underſtanding ſome of their ſublime myſteries, became now the only probable road to reputation. Proclus and Theon wrote commentaries upon the ſyſtem of Ptolemy; but, to have attempted to invent a new one, would

would then have been regarded, not only as presumption, but as impiety to the memory of their so much revered predecessors.

The ruin of the empire of the Romans, and, along with it, the subversion of all law and order, which happened a few centuries afterwards, produced the entire neglect of that study of the connecting principles of nature, to which leisure and security can alone give occasion. After the fall of those great conquerors and civilizers of mankind, the empire of the Califfs seems to have been the first state under which the world enjoyed that degree of tranquillity which the cultivation of the sciences requires. It was under the protection of those generous and magnificent princes, that the ancient philosophy and astronomy of the Greeks were restored and established in the East; that tranquillity, which their mild, just, and religious government diffused over their vast empire, revived the curiosity of mankind, to inquire into the connecting principles of nature. The fame of the Greek and Roman learning, which was then recent in the memories of men, made them desire to know, concerning these abstruse subjects, what were the doctrines of the so much renowned sages of those two nations.

They translated, therefore, into the Arabian language, and studied, with great eagerness, the works of many Greek philosophers, particularly

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ticularly of Ariſtotle, Ptolemy, Hippocrates, and Galen. The ſuperiority which they eaſily diſcovered in them, above he rude eſſays which their own nation had yet had time to produce, and which were ſuch, we may ſuppoſe, as ariſe every where in the firſt infancy of ſcience, neceſſarily determined them to embrace their ſyſtems, particularly that of Aſtronomy: neither were they ever afterwards able to throw off their authority. For, though the munificence of the Abaſſides, the ſecond race of the Califfs, is ſaid to have ſupplied the Arabian aſtronomers with larger and better inſtruments, than any that were known to Ptolemy and Hipparchus, the ſtudy of the ſciences ſeems, in that mighty empire, to have been either of too ſhort, or too interrupted a continuance, to allow them to make any conſiderable correction in the doctrines of thoſe old mathematicians. The imaginations of mankind had not yet got time to grow ſo familiar with the ancient ſyſtems, as to regard them without ſome degree of that aſtoniſhment which their grandeur and novelty excited; a novelty of a peculiar kind, which had at once the grace of what was new, and the authority of what was ancient. They were ſtill, therefore, too much enſlaved to thoſe ſyſtems, to dare to depart from them, when thoſe confuſions which ſhook, and at laſt overturned the peaceful throne of the Califfs, baniſhed the

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ſtudy of the ſciences from that empire. They had, however, before this, made ſome conſiderable improvements: they had meaſured the obliquity of the Ecliptic, with more accuracy than had been done before. The tables of Ptolemy had, by the length of time, and by the inaccuracy of the obſervations upon which they were founded, become altogether wide of what was the real ſituation of the heavenly bodies, as he himſelf indeed had foretold they would do. It became neceſſary, therefore, to form new ones, which was accordingly executed by the orders of the Califf Almamon, under whom, too, was made the firſt menſuration of the Earth that we know of, after the commencement of the Chirſtian Æra, by two Arabian aſtronomers, who, in the plain of Sennaar, meaſured two degrees of its circumference.

The victorious arms of the Saracens carried into Spain the learning, as well as the gallantry, of the Eaſt; and along with it, the tables of Almamon, and the Arabian tranſlations of Ptolemy and Ariſtotle; and thus Europe received a ſecond time, from Babylon, the rudiments of the ſcience of the heavens. The writings of Ptolemy were tranſlated from Arabic into Latin; and the Peripatetic philoſophy was ſtudied in Averroes and Avicenna with as much eagerneſs and with as much ſubmiſſion

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to its doctrines in the Weſt, as it had been in the Eaſt.

The doctrine of the Solid Spheres had, originally, been invented, in order to give a phyſical account of the revolutions of the heavenly bodies, according to the ſyſtem of Concentric Circles, to which that doctrine was very eaſily accommodated. Thoſe mathematicians who invented the doctrine of Eccentric Circles and Epicycles, contented themſelves with ſhowing, how, by ſuppoſing the heavenly bodies to revolve in ſuch orbits, the phœnomena might be connected together, and ſome ſort of uniformity and coherence be beſtowed upon their real motions. The phyſical cauſes of thoſe motions they left to the conſideration of the philoſophers; though, as appears from ſome paſſages of Ptolemy, they had ſome general apprehenſion, that they were to be explained by a like hypotheſis. But, though the ſyſtem of Hipparchus was adopted by all aſtronomers and mathematicians, it never was received, as we have already obſerved, by any one ſect of philoſophers among the ancients. No attempt, therefore, ſeems to have been made amongſt them, to accommodate to it any ſuch hypotheſis.

The ſchoolmen, who received, at once, from the Arabians, the philoſophy of Ariſtotle, and the aſtronomy of Hipparchus, were neceſſarily obliged

obliged to reconcile them to one another, and to connect together the revolutions of the Eccentric Circles and Epicycles of the one, by the ſolid Spheres of the other. Many different attempts of this kind were made by many different philoſophers: but, of them all, that of Purbach, in the fifteenth century, was the happieſt and the moſt eſteemed. Though his hypotheſis is the ſimpleſt of any of them, it would be in vain to deſcribe it without a ſcheme; neither is it eaſily intelligible with one: for, if the ſyſtem of Eccentric Circles and Epicycles was before too perplexed and intricate for the imagination to reſt in it, with complete tranquillity and ſatisfaction, it became much more ſo, when this addition had been made to it. The world, juſtly indeed, applauded the ingenuity of that philoſopher, who could unite, ſo happily, two ſuch ſeemingly inconſiſtent ſyſtems. His labours, however, ſeem rather to have increaſed than to have diminiſhed the cauſes of that diſſatisfaction, which the learned ſoon began to feel with the ſyſtem of Ptolemy. He, as well as all thoſe who had worked upon the ſame plan before him, by rendering this account of things more complex, rendered it ſtill more embarraſſing than it had been before.

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Neither was the complexneſs of this ſyſtem the ſole cauſe of the diſſatisfaction, which the world in general began, ſoon after the days of Purbach,

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Purbach, to expreſs for it. The tables of Ptolemy having, upon account of the inaccuracy of the obſervations on which they were founded, become altogether wide of the real ſituation of the heavenly bodies, thoſe of Almamon, in the ninth century, were, upon the ſame hypotheſis, compoſed to correct their deviations. Theſe again, a few ages afterwards, became, for the ſame reaſon, equally uſeleſs. In the thirteenth century, Alphonſus, the philoſophical King of Caſtile, found it neceſſary to give orders for the compoſition of thoſe tables, which bear his name. It is he, who is ſo well known for the whimſical impiety of uſing to ſay, that, had he been conſulted at the creation of the univerſe, he could have given good advice; an apophthegm which is ſuppoſed to have proceeded from his diſlike to the intricate ſyſtem of Ptolemy. In the fifteenth century, the deviation of the Alphonſine tables began to be as ſenſible, as thoſe of Ptolemy and Almamon had been before. It appeared evident, therefore, that, though the ſyſtem of Ptolemy might, in the main, be true, certain corrections were neceſſary to be made in it before it could be brought to correſpond with exact preciſion to the phœnomena. For the revolution of his Eccentric Circles and Epicycles, ſuppoſing them to exiſt, could not, it was evident, be preciſely ſuch as he repreſented them; ſince the revolutions of

the heavenly bodies deviated, in a ſhort time, ſo widely from what the moſt exact calculations, that were founded upon his hypotheſis, repreſented them. It had plainly, therefore, become neceſſary to correct, by more accurate obſervations, both the velocities and directions of all the wheels and circles of which his hypotheſis is compoſed. This, accordingly, was begun by Purbach, and carried on by Regiomontanus, the diſciple, the continuator, and the perfecter of the ſyſtem of Purbach; and one, whoſe untimely death, amidſt innumerable projects for the recovery of old, and the invention and advancement of new ſciences, is, even at this day, to be regretted.

When you have convinced the world, that an eſtabliſhed ſyſtem ought to be corrected, it is not very difficult to perſuade them that it ſhould be deſtroyed. Not long, therefore, after the death of Regiomontanus, Copernicus began to meditate a new ſyſtem, which ſhould connect together the celeſtial appearances, in a more ſimple as well as a more accurate manner, than that of Ptolemy.

The confuſion, in which the old hypotheſis repreſented the motions of the heavenly bodies, was, he tells us, what firſt ſuggeſted to him the deſign of forming a new ſyſtem, that theſe, the nobleſt works of nature, might no longer appear devoid of that harmony and proportion which diſcover themſelves in her meaneſt

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meaneſt productions. What moſt of all diſ-ſatisfied him, was, the notion of the Equalizing Circle, which, by repreſenting the revolutions of the Celeſtial Spheres, as equable only, when ſurveyed from a point that was different from their centres, introduced a real inequality into their motions; contrary to that moſt natural, and indeed fundamental idea, with which all the authors of aſtronomical ſyſtems, Plato, Eudoxus, Ariſtotle, even Hipparchus and Ptolemy themſelves, had hitherto ſet out, that the real motions of ſuch beautiful and divine objects muſt neceſſarily be perfectly regular, and go on, in a manner, as agreeable to the imagination, as the objects themſelves are to the ſenſes. He began to conſider, therefore, whether, by ſuppoſing the heavenly bodies to be arranged in a different order from that in which Ariſtotle and Hipparchus had placed them, this ſo much ſought for uniformity might not be beſtowed upon their motions. To diſcover this arrangement, he examined all the obſcure traditions delivered down to us, concerning every other hypotheſis which the ancients had invented, for the ſame purpoſe. He found, in Plutarch, that ſome old Pythagoreans had repreſented the Earth as revolving in the centre of the univerſe, like a wheel round its own axis; and that others, of the ſame ſect, had removed it from the centre, and repreſented it as revolving in the

Ecliptic like a ſtar round the central fire. By this central fire, he ſuppoſed they meant the Sun; and though in this he was very widely miſtaken, it was, it ſeems, upon this interpretation, that he began to conſider how ſuch an hypotheſis might be made to correſpond to the appearances. The ſuppoſed authority of thoſe old philoſophers, if it did not originally ſuggeſt to him his ſyſtem, ſeems, at leaſt, to have confirmed him in an opinion, which, it is not improbable, that he had before-hand other reaſons for embracing, notwithſtanding what he himſelf would affirm to the contrary.

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It then occurred to him, that, if the Earth was ſuppoſed to revolve every day round its axis, from weſt to eaſt, all the heavenly bodies would appear to revolve, in a contrary direction, from eaſt to weſt. The diurnal revolution of the heavens, upon this hypotheſis, might be only apparent; the firmament, which has no other ſenſible motion, might be perfectly at reſt; while the Sun, the Moon, and the Five Planets, might have no other movement beſide that eaſtward revolution, which is peculiar to themſelves. That, by ſuppoſing the Earth to revolve with the Planets, round the Sun, in an orbit, which comprehended within it the orbits of Venus and Mercury, but was comprehended within thoſe of Mars, Jupiter, and Saturn, he could, without the embarraſſment of Epicycles, connect together

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the apparent annual revolutions of the Sun, and the direct, retrograde, and ſtationary appearances of the Planets: that while the Earth really revolved round the Sun on one ſide of the heavens, the Sun would appear to revolve round the Earth on the other; that while ſhe really advanced in her annual courſe, he would appear to advance eaſtward in that movement which is peculiar to himſelf. That, by ſuppoſing the axis of the Earth to be always parallel to itſelf, not to be quite perpendicular, but ſomewhat inclined to the plane of her orbit, and conſequently to preſent to the Sun, the one pole when on the one ſide of him, and the other when on the other, he would account for the obliquity of the Ecliptic; the Sun's ſeemingly alternate progreſſion from north to ſouth, and from ſouth to north, the conſequent change of the ſeaſons, and different lengths of the days and nights in the different ſeaſons.

If this new hypotheſis thus connected together all theſe appearances as happily as that of Ptolemy, there were others which it connected together much better. The three ſuperior Planets, when nearly in conjunction with the Sun, appear always at the greateſt diſtance from the Earth, are ſmalleſt, and leaſt ſenſible to the eye, and ſeem to revolve forward in their direct motion with the greateſt rapidity. On the contrary, when in oppoſition to the Sun, that is, when in their meridian

meridian about midnight, they appear neareſt the Earth, are largeſt, and moſt ſenſible to the eye, and ſeem to revolve backwards in their retrograde motion. To explain theſe appearances, the ſyſtem of Ptolemy ſuppoſed each of theſe Planets to be at the upper part of their ſeveral Epicycles, in the one caſe; and at the lower, in the other. But it afforded no ſatisfactory principle of connection, which could lead the mind eaſily to conceive how the Epicycles of thoſe Planets, whoſe ſpheres were ſo diſtant from the ſphere of the Sun, ſhould thus, if one may ſay ſo, keep time to his motion. The ſyſtem of Copernicus afforded this eaſily, and like a more ſimple machine, without the aſſiſtance of Epicycles, connected together, by fewer movements, the complex appearances of the heavens. When the ſuperior Planets appear nearly in conjunction with the Sun, they are then in the ſide of their orbits, which is almoſt oppoſite to, and moſt diſtant from the Earth, and therefore appear ſmalleſt, and leaſt ſenſible to the eye. But, as they then revolve in a direction which is almoſt contrary to that of the Earth, they appear to advance forward with double velocity; as a ſhip, that ſails in a contrary direction to another, appears from that other, to ſail both with its own velocity, and the velocity of that from which it is ſeen. On the contrary, when thoſe Planets are in

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oppofition to the Sun, they are on the fame fide of the Sun with the Earth, are neareft it, moft fenfible to the eye, and revolve in the fame direction with it; but, as their revolutions round the Sun are flower than that of the Earth, they are neceffarily left behind by it, and therefore feem to revolve backwards; as a fhip which fails flower than another, though it fails in the fame direction, appears from that other to fail backwards. After the fame manner, by the fame annual revolution of the Earth, he connected together the direct and retrograde motions of the two inferior Planets, as well as the ftationary appearances of all the Five.

There are fome other particular phœnomena of the two inferior Planets, which correfpond ftill better to this fyftem, and ftill worfe to that of Ptolemy. Venus and Mercury feem to attend conftantly upon the motion of the Sun, appearing, fometimes on the one fide, and fometimes on the other, of that great luminary; Mercury being almoft always buried in his rays, and Venus never receding above forty-eight degrees from him, contrary to what is obferved in the other three Planets, which are often feen in the oppofite fide of the heavens, at the greateft poffible diftance from the Sun. The fyftem of Ptolemy accounted for this, by fuppofing that the centers of the Epicycles of thefe two Planets

were always in the ſame line with thoſe of the Sun and the Earth; that they appeared therefore in conjunction with the Sun, when either in the upper or lower part of their Epicycles, and at the greateſt diſtance from him, when in the ſides of them. It aſſigned, however, no reaſon why the Epicycles of theſe two Planets ſhould obſerve ſo different a rule from that which takes place in thoſe of the other three, nor for the enormous Epicycle of Venus, whoſe ſides muſt have been forty-eight degrees diſtant from the Sun, while its center was in conjunction with him, and whoſe diameter muſt have covered more than a quadrant of the Great Circle. But how eaſily all theſe appearances coincide with the hypotheſis, which repreſents thoſe two inferior Planets revolving round the Sun in orbits comprehended within the orbit of the Earth, is too obvious to require an explanation.

Thus far did this new account of things render the appearances of the heavens more completely coherent than had been done by any of the former ſyſtems. It did this, too, by a more ſimple and intelligible, as well as more beautiful machinery. It repreſented the Sun, the great enlightener of the univerſe, whoſe body was alone larger than all the Planets taken together, as eſtabliſhed immoveable in the center, ſhedding light and heat on

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all the worlds that circulated around him in one uniform direction, but in longer or ſhorter periods, according to their different diſtances. It took away the diurnal revolution of the firmament, whoſe rapidity, upon the old hypotheſis, was beyond what even thought could conceive. It not only delivered the imagination from the embarraſſment of Epicycles, but from the difficulty of conceiving theſe two oppoſite motions going on at the ſame time, which the ſyſtem of Ptolemy and Ariſtotle beſtowed upon all the Planets; I mean, their diurnal weſtward, and periodical eaſtward revolutions. The Earth's revolution round its own axis took away the neceſſity for ſuppoſing the firſt, and the ſecond was eaſily conceived when by itſelf. The Five Planets, which ſeem, upon all other ſyſtems, to be objects of a ſpecies by themſelves, unlike to every thing to which the imagination has been accuſtomed, when ſuppoſed to revolve along with the Earth round the Sun, were naturally apprehended to be objects of the ſame kind with the Earth, habitable, opaque, and enlightened only by the rays of the Sun. And thus this hypotheſis, by claſſing them in the ſame ſpecies of things, with an object that is of all others the moſt familiar to us, took off that wonder and uncertainty which the ſtrangeneſs and ſingularity of

of their appearance had excited; and thus far, too, better anſwered the great end of Philoſophy. SECT. IV.

Neither did the beauty and ſimplicity of this ſyſtem alone recommend it to the imagination; the novelty and unexpectedneſs of that view of nature, which it opened to the fancy, excited more wonder and ſurpriſe than the ſtrangeſt of thoſe appearances, which it had been invented to render natural and familiar, and theſe ſentiments ſtill more endeared it. For, though it is the end of Philoſophy, to allay that wonder, which either the unuſual or ſeemingly disjointed appearances of nature excite, yet ſhe never triumphs ſo much, as when, in order to connect together a few, in themſelves, perhaps, inconſiderable objects, ſhe has, if I may ſay ſo, created another conſtitution of things, more natural indeed, and ſuch as the imagination can more eaſily attend to, but more new, more contrary to common opinion and expectation, than any of thoſe appearances themſelves. As, in the inſtance before us, in order to connect together ſome ſeeming irregularities in the motions of the Planets, the moſt inconſiderable objects in the heavens, and of which the greater part of mankind have no occaſion to take any notice during the whole courſe of their lives, ſhe has, to talk in the hyperbolical language of Tycho-Brache, moved

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the Earth from its foundations, ſtopt the revolution of the Firmament, made the Sun ſtand ſtill, and ſubverted the whole order of the Univerſe.

Such were the advantages of this new hypotheſis, as they appeared to its author, when he firſt invented it. But, though that love of paradox, ſo natural to the learned, and that pleaſure, which they are ſo apt to take in exciting, by the novelty of their ſuppoſed diſcoveries, the amazement of mankind, may, notwithſtanding what one of his diſciples tells us to the contrary, have had its weight in prompting Copernicus to adopt this ſyſtem; yet, when he had completed his Treatiſe of Revolutions, and began coolly to conſider what a ſtrange doctrine he was about to offer to the world, he ſo much dreaded the prejudice of mankind againſt it, that, by a ſpecies of continence, of all others the moſt difficult to a philoſopher, he detained it in his cloſet for thirty years together. At laſt, in the extremity of old age, he allowed it to be extorted from him, but died as ſoon as it was printed, and before it was publiſhed.

When it appeared in the world, it was almoſt univerſally diſapproved of, by the learned as well as by the ignorant. The natural prejudices of ſenſe, confirmed by education, prevailed too much with both, to allow them to give it a fair examination. A

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few disciples only, whom he himself had instructed in his doctrine, received it with esteem and admiration. One of them, Reinholdus, formed, upon this hypothesis, larger and more accurate astronomical tables, than what accompanied the Treatise of Revolutions, in which Copernicus had been guilty of some errors in calculation. It soon appeared, that these Prutenic Tables, as they were called, corresponded more exactly with the heavens, than the Tables of Alphonsus. This ought naturally to have formed a prejudice in favour of the diligence and accuracy of Copernicus in observing the heavens. But it ought to have formed none in favour of his hypothesis; since the same observations, and the result of the same calculations, might have been accommodated to the system of Ptolemy, without making any greater alteration in that system than what Ptolemy had foreseen, and had even foretold should be made. It formed, however, a prejudice in favour of both, and the learned began to examine, with some attention, an hypothesis which afforded the easiest methods of calculation, and upon which the most exact predictions had been made. The superior degree of coherence, which it bestowed upon the celestial appearances, the simplicity and uniformity which it introduced into the real directions and velocities of the Planets, soon

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disposed many astronomers, first to favour, and at last to embrace a system, which thus connected together so happily, the most disjointed of those objects that chiefly occupied their thoughts. Nor can any thing more evidently demonstrate, how easily the learned give up the evidence of their senses to preserve the coherence of the ideas of their imagination, than the readiness with which this, the most violent paradox in all philosophy, was adopted by many ingenious astronomers, notwithstanding its inconsistency with every system of physics then known in the world, and notwithstanding the great number of other more real objections, to which, as Copernicus left it, this account of things was most justly exposed.

It was adopted, however, nor can this be wondered at, by astronomers only. The learned in all other sciences, continued to regard it with the same contempt as the vulgar. Even astronomers were divided about its merit; and many of them rejected a doctrine, which not only contradicted the established system of Natural Philosophy, but which, considered astronomically only, seemed to labour under several difficulties.

Some of the objections against the motion of the Earth, that were drawn from the prejudices of sense, the patrons of this system, indeed, easily enough, got over. They represented,

ſented, that the Earth might really be in motion, though, to its inhabitants, it ſeemed to be at reſt; and that the Sun, and Fixed Stars, might really be at reſt, though from the Earth they ſeemed to be in motion; in the ſame manner as a ſhip, which ſails through a ſmooth ſea, ſeems to thoſe who are in it, to be at reſt, though really in motion; while the objects which ſhe paſſes along, ſeem to be in motion, though really at reſt.

But there were ſome other objections, which, though grounded upon the ſame natural prejudices, they found it more difficult to get over. The Earth had always preſented itſelf to the ſenſes, not only as at reſt, but as inert, ponderous, and even averſe to motion. The imagination had always been accuſtomed to conceive it as ſuch, and ſuffered the greateſt violence, when obliged to purſue, and attend it, in that rapid motion which the ſyſtem of Copernicus beſtowed upon it. To enforce their objection, the adverſaries of this hypotheſis were at pains to calculate the extreme rapidity of this motion. They repreſented, that the circumference of the Earth had been computed to be above twenty-three thouſand miles: if the Earth, therefore, was ſuppoſed to revolve every day round its axis, every point of it near the equator would paſs over above twenty-three thouſand miles in a day; and conſequently, near a thouſand miles in an hour,

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hour, and about ſixteen miles in a minute; a motion more rapid than that of a cannon ball, or even than the ſwifter progreſs of ſound. The rapidity of its periodical revolution was yet more violent than that of its diurnal rotation. How, therefore, could the imagination ever conceive ſo ponderous a body to be naturally endowed with ſo dreadful a movement? The Peripatetic Philoſophy, the only philoſophy then known in the world, ſtill further confirmed this prejudice. That philoſophy, by a very natural, though, perhaps, groundleſs diſtinction, divided all motion into Natural and Violent. Natural motion was that which flowed from an innate tendency in the body, as when a ſtone fell downwards: Violent motion, that which aroſe from external force, and which was, in ſome meaſure, contrary to the natural tendency of the body, as when a ſtone was thrown upwards, or horizontally. No violent motion could be laſting; for, being conſtantly weakened by the natural tendency of the body, it would ſoon be deſtroyed. The natural motion of the Earth, as was evident in all its parts, was downwards, in a ſtrait line to the center; as that of fire and air was upwards, in a ſtrait line from the center. It was the heavens only that revolved naturally in a circle. Neither, therefore, the ſuppoſed revolution of the Earth round its own center, nor that round the Sun, could be natural motions;

motions; they muſt therefore be violent, and consequently could be of no long continuance. It was in vain that Copernicus replied, that gravity was, probably, nothing elſe beſides a tendency in the different parts of the ſame Planet, to unite themſelves to one another; that this tendency took place, probably, in the parts of the other Planets, as well as in thoſe of the Earth; that it could very well be united with a circular motion; that it might be equally natural to the whole body of the Planet, and to every part of it; that his adverſaries themſelves allowed, that a circular motion was natural to the heavens, whoſe diurnal revolution was infinitely more rapid than even that motion which he had beſtowed upon the Earth; that though a like motion was natural to the Earth, it would ſtill appear to be at reſt to its inhabitants, and all the parts of it to tend in a ſtrait line to the center, in the ſame manner as at preſent. But this anſwer, how ſatisfactory ſoever it may appear to be now, neither did nor could appear to be ſatisfactory then. By admitting the diſtinction betwixt natural and violent motions, it was founded upon the ſame ignorance of mechanical principles with the objection. The ſyſtems of Ariſtotle and Hipparchus ſuppoſed, indeed, the diurnal motion of the heavenly bodies to be infinitely more rapid than even that

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that dreadful movement which Copernicus beſtowed upon the Earth. But they ſuppoſed, at the ſame time, that thoſe bodies were objects of a quite different ſpecies, from any we are acquainted with, near the ſurface of the Earth, and to which, therefore, it was leſs difficult to conceive that any ſort of motion might be natural. Thoſe objects, beſides, had never preſented themſelves to the ſenſes, as moving otherwiſe, or with leſs rapidity, than theſe ſyſtems repreſented them. The imagination, therefore, could feel no difficulty in following a repreſentation which the ſenſes had rendered quite familiar to it. But when the Planets came to be regarded as ſo many Earths, the caſe was quite altered. The imagination had been accuſtomed to conceive ſuch objects as tending rather to reſt than motion; and this idea of their natural inertneſs, encumbered, if one may ſay ſo, and clogged its flight whenever it endeavoured to purſue them in their periodical courſes, and to conceive them as continually ruſhing through the celeſtial ſpaces, with ſuch violent and unremitting rapidity.

Nor were the firſt followers of Copernicus more fortunate in their anſwers to ſome other objections, which were founded indeed in the ſame ignorance of the laws of motion, but which, at the ſame time, were neceſſarily con-

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nected with that way of conceiving things, which then prevailed univerſally in the learned world.

If the Earth, it was ſaid, revolved ſo rapidly from weſt to eaſt, a perpetual wind would ſet in from eaſt to weſt, more violent than what blows in the greateſt hurricanes; a ſtone, thrown weſtwards would fly to a much greater diſtance than one thrown with the ſame force eaſtwards; as what moved in a direction, contrary to the motion of the Earth, would neceſſarily paſs over a greater portion of its ſurface, than what, with the ſame velocity, moved along with it. A ball, it was ſaid, dropt from the maſt of a ſhip under ſail, does not fall preciſely at the foot of the maſt, but behind it; and in the ſame manner, a ſtone dropt from a high tower would not, upon the ſuppoſition of the Earth's motion, fall preciſely at the bottom of the tower, but weſt of it, the Earth being, in the mean time, carried away eaſtward from below it. It is amuſing to obſerve, by what ſubtile and metaphyſical evaſions the followers of Copernicus endeavoured to elude this objection, which before the doctrine of the Compoſition of Motion had been explained by Galileo, was altogether unanſwerable. They allowed, that a ball dropt from the maſt of a ſhip under ſail would not fall at the foot of the maſt, but behind it; becauſe the ball, they ſaid, was no part of the ſhip,

T. ſhip, and becauſe the motion of the ſhip was natural neither to itſelf nor to the ball. But the ſtone was a part of the earth, and the diurnal and annual revolutions of the Earth were natural to the whole, and to every part of it, and therefore to the ſtone. The ſtone, therefore, having naturally the ſame motion with the Earth, fell preciſely at the bottom of the tower. But this anſwer could not ſatisfy the imagination, which ſtill found it difficult to conceive how theſe motions could be natural to the Earth; or how a body, which had always preſented itſelf to the ſenſes as inert, ponderous, and averſe to motion, ſhould naturally be continually wheeling about both its own axis and the Sun, with ſuch violent rapidity. It was, beſides, argued by Tycho Brache, upon the principles of the ſame philoſophy, which had afforded both the objection and the anſwer, that even upon the ſuppoſition, that any ſuch motion was natural to the whole body of the Earth, yet the ſtone, which was ſeparated from it, could no longer be actuated by that motion. The limb, which is cut off from an animal, loſes thoſe animal motions which were natural to the whole. The branch, which is cut off from the trunk, loſes that vegetative motion which is natural to the whole tree. Even the metals, minerals, and ſtones, which are dug out from the boſom of the Earth, loſe thoſe motions which occa-

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ſoned their production and encreaſe, and which were natural to them in their original ſtate. Though the diurnal and annual motion of the Earth, therefore, had been natural to them while they were contained in its boſom; it could no longer be ſo when they were ſeparated from it.

Tycho Brache, the great reſtorer of the ſcience of the heavens, who had ſpent his life, and waſted his fortune upon the advancement of Aſtronomy, whoſe obſervations were both more numerous and more accurate than thoſe of all the aſtronomers who had gone before him, was himſelf ſo much affected by the force of this objection, that, though he never mentioned the ſyſtem of Copernicus without ſome note of the high admiration he had conceived for its author, he could never himſelf be induced to embrace it; yet all his aſtronomical obſervations tended to confirm it. They demonſtrated, that Venus and Mercury were ſometimes above, and ſometimes below the Sun; and that, conſequently, the Sun, and not the Earth, was the center of their periodical revolutions. They ſhowed, that Mars, when in his meridian at midnight, was nearer to the Earth than the Earth is to the Sun; though, when in conjunction with the Sun, he was much more remote from the Earth than that luminary; a diſcovery which was abſolutely inconſiſtent with the ſyſtem of Ptolemy, which

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which proved, that the Sun, and not the Earth, was the center of the periodical revolutions of Mars, as well as of Venus and Mercury; and which demonſtrated that the Earth was placed betwixt the orbits of Mars and Venus. They made the ſame thing probable with regard to Jupiter and Saturn; that they, too, revolved round the Sun; and that, therefore, the Sun, if not the center of the univerſe, was at leaſt, that of the planetary ſyſtem. They proved, that Comets were ſuperior to the Moon, and moved through the heavens in all poſſible directions; an obſervation incompatible with the Solid Spheres of Ariſtotle and Purbach, and which, therefore, overturned the phyſical part, at leaſt, of the eſtabliſhed Aſtronomy.

All theſe obſervations, joined to his averſion to the ſyſtem, and perhaps, notwithſtanding the generoſity of his character, ſome little jealouſy of the fame of Copernicus, ſuggeſted to Tycho the idea of a new hypotheſis, in which the Earth continued to be, as in the old account, the immoveable center of the univerſe, round which the firmament revolved every day from eaſt to weſt, and, by ſome ſecret virtue, carried the Sun, the Moon, and the Five Planets along with it, notwithſtanding their immenſe diſtance, and notwitſtanding that there was nothing betwixt it and them but the moſt fluid ether. But, although all

all these seven bodies thus obeyed the diurnal revolution of the Firmament, they had each of them, as in the old system, too, a contrary periodical eastward revolution of their own, which made them appear to be every day, more or less, left behind by the Firmament. The Sun was the center of the periodical revolutions of the Five Planets; the Earth, that of the Sun and Moon. The Five Planets followed the Sun in his periodical revolution round the Earth, as they did the Firmament in its diurnal rotation. The three superior Planets comprehended the Earth within the orbit in which they revolved round the Sun, and had each of them an Epicycle to connect together, in the same manner as in the system of Ptolemy, their direct, retrograde, and stationary appearances. As, notwithstanding their immense distance, they followed the Sun in his periodical revolution round the Earth, keeping always at an equal distance from him, they were necessarily brought much nearer to the Earth when in opposition to the Sun, than when in conjunction with him. Mars, the nearest of them, when in his meridian at midnight, came within the orbit which the Sun described round the Earth, and consequently was then nearer to the Earth than the Earth was to the Sun. The appearances of the two inferior Planets were explained, in the same manner, as in the system of Coper-

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nicus, and consequently required no Epicycle to connect them. The circles in which the Five Planets performed their periodical revolutions round the Sun, as well as those in which the Sun and Moon performed theirs round the Earth, were, as both in the old and new hypothesis, Eccentric Circles, to connect together their differently accelerated and retarded motions.

Such was the system of Tycho Brahe, compounded, as is evident, out of these of Ptolemy and Copernicus; happier than that of Ptolemy, in the account which it gives of the motions of the two inferior Planets; more complex, by supposing the different revolutions of all the Five to be performed round two different centers; the diurnal round the Earth, the periodical round the Sun, but, in every respect, more complex and more incoherent than that of Copernicus. Such, however, was the difficulty that mankind felt in conceiving the motion of the Earth, that it long balanced the reputation of that otherwise more beautiful system. It may be said, that those who considered the heavens only, favoured the system of Copernicus, which connected so happily all the appearances which presented themselves there. But that those who looked upon the Earth, adopted the account of Tycho Brahe, which, leaving it at rest in the center of the universe, did less

violence to the uſual habits of the imagination. The learned were, indeed, ſenſible of the intricacy, and of the many incoherences of that ſyſtem; that it gave no account why the Sun, Moon, and Five Planets, ſhould follow the revolution of the Firmament; or why the Five Planets, notwithſtanding the immenſe diſtance of the three ſuperior ones, ſhould obey the periodical motion of the Sun; or why the Earth, though placed between the orbits of Mars and Venus, ſhould remain immoveable in the center of the Firmanent, and conſtantly reſiſt the influence of whatever it was, which carried bodies that were ſo much larger than itſelf, and that were placed on all ſides of it, periodically round the Sun. Tycho Brahe died before he had fully explained his ſyſtem. His great and merited renown diſpoſed many of the learned to believe, that, had his life been longer, he would have connected together many of theſe incoherences, and knew methods of adapting his ſyſtem to ſome other appearances, with which none of his followers could connect it.

The objection to the ſyſtem of Copernicus, which was drawn from the nature of motion, and that was moſt inſiſted on by Tycho Brahe, was at laſt fully anſwered by Galileo; not, however, till about thirty years after the death of Tycho, and about a hundred after that of Copernicus. It was then that Galileo, by

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explaining the nature of the compoſition of motion, by ſhowing, both from reaſon and experience, that a ball dropt from the maſt of a ſhip under ſail would fall preciſely at the foot of the maſt, and by rendering this doctine, from a great number of other inſtances, quite familiar to the imagination, took off, perhaps, the principal objection which had been made to this hypotheſis.

Several other aſtronomical difficulties, which encumbered this account of things, were removed by the ſame philoſopher. Copernicus, after altering the center of the world, and making the Earth, and all the Planets revolve round the Sun, was obliged to leave the Moon to revolve round the Earth as before. But no example of any ſuch ſecondary Planet having then been diſcovered in the heavens, there ſeemed ſtill to be this irregularity remaining in the ſyſtem. Galileo, who firſt applied teleſcopes to Aſtronomy, diſcovered, by their aſſiſtance, the Satellites of Jupiter, which, revolving round that Planet, at the ſame time that they were carried along with it in its revolution, round either the Earth, or the Sun, made it ſeem leſs contrary to the analogy of nature, that the Moon ſhould both revolve round the Earth, and accompany her in her revolution round the Sun.

It had been objected to Copernicus, that, if Venus and Mercury revolved round the Sun, in

in an orbit comprehended within the orbit of the Earth, they would ſhow all the ſame phaſes with the Moon, preſent, ſometimes their darkened, and ſometimes their enlightened ſides to the Earth, and ſometimes part of the one, and part of the other. He anſwered, that they undoubtedly did all this; but that their ſmallneſs and diſtance hindered us from perceiving it. This very bold aſſertion of Copernicus was confirmed by Galileo. His teleſcopes rendered the phaſes of Venus quite ſenſible, and thus demonſtrated, more evidently than had been done, even by the obſervations of Tycho Brahe, the revolutions of theſe two Planets round the Sun, as well as ſo far deſtroyed the ſyſtem of Ptolemy.

The mountains and ſeas, which, by the help of the ſame inſtrument, he diſcovered, or imagined he had diſcovered in the Moon, rendering that Planet, in every reſpect, ſimilar to the Earth, made it ſeem leſs contrary to the analogy of nature, that, as the Moon revolved round the Earth, the Earth ſhould revolve round the Sun.

The ſpots which, in the ſame manner, he diſcovered in the Sun, demonſtrating, by their motion, the revolution of the Sun round his axis, made it ſeem leſs improbable that the Earth, a body ſo much ſmaller than the Sun, ſhould revolve round her axis in the ſame manner.

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Succeeding telescopical observations, discovered, in each of the Five Planets, spots not unlike those which Galileo had observed in the Moon, and thereby seemed to demonstrate what Copernicus had only conjectured, that the Planets were naturally opaque, enlightened only by the rays of the Sun, habitable, diversified by seas and mountains, and, in every respect, bodies of the same kind with the Earth; and thus added one other probability to this system. By discovering, too, that each of the Planets revolved round its own axis, at the same time that it was carried round either the Earth or the Sun, they made it seem quite agreeable to the analogy of nature, that the Earth, which, in every other respect, resembled the Planets, should, like them too, revolve round its own axis, and at the same time perform its periodical motion round the Sun.

While, in Italy, the unfortunate Galileo was adding so many probabilities to the system of Copernicus, there was another philosopher employing himself in Germany, to ascertain, correct and improve it; Kepler, with great genius, but without the taste, or the order and method of Galileo, possessed, like all his other countrymen, the most laborious industry, joined to that passion for discovering proportions and resemblances betwixt the different parts of nature, which, though common to all philoso-

philoſophers, ſeems, in him, to have been exceſſive. He had been inſtructed, by Mæſtlinus, in the ſyſtem of Copernicus; and his firſt curioſity was, as he tells us, to find out, why the Planets, the Earth being counted for one, were Six in number; why they were placed at ſuch irregular diſtances from the Sun; and whether there was any uniform proportion betwixt their ſeveral diſtances, and the times employed in their periodical revolutions. Till ſome reaſon, or proportion of this kind, could be diſcovered, the ſyſtem did not appear to him to be completely coherent. He endeavoured, firſt, to find it in the proportions of numbers, and plain figures; afterwards, in thoſe of the regular ſolids; and, laſt of all, in thoſe of the muſical diviſions of the Octave. Whatever was the ſcience which Kepler was ſtudying, he ſeems conſtantly to have pleaſed himſelf with finding ſome analogy betwixt it and the ſyſtem of the univerſe; and thus, arithmetic and muſic, plane and ſolid geometry, came all of them by turns to illuſtrate the doctrine of the Sphere, in the explaining of which he was, by his profeſſion, principally employed. Tycho Brahe, to whom he had preſented one of his books, though he could not but diſapprove of his ſyſtem, was pleaſed, however, with his genius, and with his indefatigable diligence in making the moſt laborious calculations. That generous and magnificent

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SECT. IV. Dane invited the obſcure and indigent Kepler to come and live with him, and communicated to him, as ſoon as he arrived, his obſervations upon Mars, in the arranging and methodizing of which his diſciples were at that time employed. Kepler, upon comparing them with one another, found, that the orbit of Mars was not a perfect circle; that one of its diameters was ſomewhat longer than the other; and that it approached to an oval, or an ellipſe, which had the Sun placed in one of its foci. He found, too, that the motion of the Planet was not equable; that it was ſwifteſt when neareſt the Sun, and floweſt when furtheſt from him; and that its velocity gradually encreaſed, or diminiſhed, according as it approached or receded from him. The obſervations of the ſame aſtronomer diſcovered to him, though not ſo evidently, that the ſame things were true of all the other Planets; that their orbits were elliptical, and that their motions were ſwifteſt when neareſt the Sun, and floweſt when furtheſt from him. They ſhowed the ſame things, too, of the Sun, if ſuppoſed to revolve round the Earth; and conſequently of the Earth, if ſuppoſed to revolve round the Sun.

That the motions of all the heavenly bodies were perfectly circular, had been the fundamental idea, upon which every aſtronomical hypotheſis, except the irregular one of the Stoics,

Stoics, had been built. A circle, as the degree of its curvature is every where the ſame, is of all curve lines the ſimpleſt and the moſt eaſily conceived. Since it was evident, therefore, that the heavenly bodies did not move in ſtraight lines, the indolent imagination found, that it could moſt eaſily attend to their motions if they were ſuppoſed to revolve in perfect circles. It had, upon this account, determined that a circular motion was the moſt perfect of all motions, and that none but the moſt perfect motion could be worthy of ſuch beautiful and divine objects; and it had upon this account, ſo often, in vain, endeavoured to adjuſt to the appearances, ſo many different ſyſtems, which all ſuppoſed them to revolve in this manner.

The equality of their motions was another fundamental idea, which, in the ſame manner, and for the ſame reaſon, was ſuppoſed by all the founders of aſtronomical ſyſtems. For an equal motion can be more eaſily attended to, than one that is continually either accelerated or retarded. All inconſtancy, therefore, was declared to be unworthy thoſe bodies which revolved in the celeſtial regions, and to be fit only for inferior and ſublunary things. The calculations of Kepler overturned, with regard to the Planets, both theſe natural prejudices of the imagination; deſtroyed their circular orbits; and introduced into their real motions,

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T. ſuch an inequality as no equalizing circle would remedy. It was, however, to render their motions perfectly equable, without even the aſſiſtance of an equalizing circle, that Copernicus, as he himſelf aſſures us, had originally invented his ſyſtem. Since the calculations of Kepler, therefore, overturned what Copernicus had principally in view in eſtabliſhing his ſyſtem, we cannot wonder that they ſhould at firſt ſeem rather to embarraſs than improve it.

It is true, by theſe elliptical orbits and unequal motions, Kepler diſengaged the ſyſtem from the embarraſſment of thoſe ſmall Epicycles, which Copernicus, in order to connect the ſeemingly accelerated and retarded movements of the Planets, with their ſuppoſed real equality, had been obliged to leave in it. For it is remarkable, that though Copernicus had delivered the orbits of the Planets from the enormous Epycicles of Hipparchus, that though in this conſiſted the great ſuperiority of his ſyſtem above that of the ancient aſtronomers, he was yet obliged, himſelf, to abandon, in ſome meaſure, this advantage, and to make uſe of ſome ſmall Epicycles, to join together thoſe ſeeming irregularities. His Epicycles indeed, like the irregularities for whoſe ſake they were introduced, were but ſmall ones, and the imaginations of his firſt followers ſeem, accordingly, either to have

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ſlurred them over altogether, or ſcarcely to have obſerved them. Neither Galileo, nor Gaſſendi, the two moſt eloquent of his defenders, take any notice of them. Nor does it ſeem to have been generally attended to, that there was any ſuch thing as Epicycles in the ſyſtem of Copernicus, till Kepler, in order to vindicate his own elliptical orbits, inſiſted, that even, according to Copernicus, the body of the Planet was to be found but at two different places in the circumference of that circle which the centre of its Epicycle deſcribed.

It is true, too, that an ellipſe is, of all curve lines after a circle, the ſimpleſt and moſt eaſily conceived; and it is true, beſides all this, that, while Kelper took from the motion of the Planets the eaſieſt of all proportions, that of equality, he did not leave them abſolutely without one, but aſcertained the rule by which their velocities continually varied; for a genius ſo fond of analogies, when he had taken away one, would be ſure to ſubſtitute another in its room. Notwithſtanding all this, notwithſtanding that his ſyſtem was better ſupported by obſervations than any ſyſtem had ever been before, yet, ſuch was the attachment to the equal motions and circular orbits of the Planets, that it ſeems, for ſome time, to have been in general but little attended to by the learned, to have been altogether neglected by philo-

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philoſophers, and not much regarded even by aſtronomers.

Gaſſendi, who began to figure in the world about the latter days of Kepler, and who was himſelf no mean aſtronomer, ſeems indeed to have conceived a good deal of eſteem for his diligence and accuracy in accommodating the obſervations of Tycho Brahe to the ſyſtem of Copernicus. But Gaſſendi appears to have had no comprehenſion of the importance of thoſe alterations which Kepler had made in that ſyſtem, as is evident from his ſcarcely ever mentioning them in the whole courſe of his voluminous writings upon Aſtronomy. Des Cartes, the cotemporary and rival of Gaſſendi, ſeems to have paid no attention to them at all, but to have built his Theory of the Heavens, without any regard to them. Even thoſe aſtronomers, whom a ſerious attention had convinced of the juſtneſs of his corrections, were ſtill ſo enamoured with the circular orbits and equal motions, that they endeavoured to compound his ſyſtem with thoſe ancient, but natural prejudices. Thus, Ward endeavoured to ſhow that, though the Planets moved in elliptical orbits, which had the Sun in one of their foci, and though their velocities in the elliptical line were continually varying, yet, if a ray was ſuppoſed to be extended from the center of any one of them to the other focus, and to be carried along by the period.

periodical motion of the Planet, it would make equal angles in equal times, and consequently cut off equal portions of the circle of which that other focus was the center. To one, therefore, placed in that focus, the motion of the Planet would appear to be perfectly circular and perfectly equable, in the same manner as in the Equalizing Circles of Ptolemy and Hipparchus. Thus Bouillaud, who censured this hypothesis of Ward, invented another of the same kind, infinitely more whimsical and capricious. The Planets, according to that astronomer, always revolve in circles; for that being the most perfect figure, it is impossible they should revolve in any other. No one of them, however, continues to move in any one circle, but is perpetually passing from one to another, through an infinite number of circles, in the course of each revolution; for an ellipse, said he, is an oblique section of a cone, and in a cone, betwixt the two vortices of the ellipse there is an infinite number of circles, out of the infinitely small portions of which the elliptical line is compounded. The Planet, therefore, which moves in this line, is, in every point of it, moving in an infinitely small portion of a certain circle. The motion of each Planet, too, according to him, was necessarily, for the same reason, perfectly equable. An equable motion being the most perfect of all motions. It was not,

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not, however, in the elliptical line, that it was equable, but in any one of the circles that were parallel to the base of that cone, by whose section this elliptical line had been formed: for, if a ray was extended from the Planet to any one of those circles, and carried along by its periodical motion, it would cut off equal portions of that circle in equal times; another most fantastical equalizing circle, supported by no other foundation besides the frivolous connection betwixt a cone and an ellipse, and recommended by nothing but the natural passion for circular orbits and equable motions. It may be regarded as the last effort of this passion, and may serve to show the force of that principle which could thus oblige this accurate observer, and great improver of the Theory of the Heavens, to adopt so strange an hypothesis. Such was the difficulty and hesitation with which the followers of Copernicus adopted the corrections of Kepler.

The rule, indeed, which Kepler ascertained for determining the gradual acceleration or retardation in the movement of the Planets, was intricate, and difficult to be comprehended; it could therefore but little facilitate the progress of the imagination in tracing those revolutions which were supposed to be conducted by it. According to that astronomer, if a straight line was drawn from the center of each Planet to the Sun, and carried along by

by the periodical motion of the Planet, it would defcribe equal areas in equal times, though the Planet did not pafs over equal fpaces; and the fame rule he found, took place nearly with regard to the Moon. The imagination, when acquainted with the law by which any motion is accelerated or retarded, can follow and attend to it more eafily, than when at a lofs, and, as it were, wandering in uncertainty with regard to the proportion which regulates its varieties; the difcovery of this analogy therefore, no doubt, rendered the fyftem of Kepler more agreeable to the natural tafte of mankind: it was, however, an analogy too difficult to be followed, or comprehended, to render it completely fo.

Kepler, befides this, introduced another new analogy into the fyftem, and firft difcovered, that there was one uniform relation obferved betwixt the diftances of the Planets from the Sun, and the times employed in their periodical motions. He found, that their periodical times were greater than in proportion to their diftances, and lefs than in proportion to the fquares of thofe diftances; but, that they were nearly as the mean proportionals betwixt their diftances and the fquares of their diftances; or, in other words, that the fquares of their periodical times were nearly as the cubes of their diftances; an analogy, which, though, like all others, it no doubt rendered

SECT. IV. rendered the ſyſtem ſomewhat more diſtinct and comprehenſible, was, however, as well as the former, of too intricate a nature to facilitate very much the effort of the imagination in conceiving it.

The truth of both theſe analogies, intricate as they were, was at laſt fully eſtabliſhed by the obſervations of Caſſini. That aſtronomer firſt diſcovered, that the ſecondary Planets of Jupiter and Saturn revolved round their primary ones, according to the ſame laws which Kepler had obſerved in the revolutions of the primary ones round the Sun, and that of the Moon round the earth; that each of them deſcribed equal areas in equal times, and that the ſquares of their periodic times were as the cubes of their diſtances. When theſe two laſt abſtruſe analogies, which, when Kepler at firſt obſerved them, were but little regarded, had been thus found to take place in the revolutions of the Four Satellites of Jupiter, and in thoſe of the Five of Saturn, they were now thought not only to confirm the doctrine of Kepler, but to add a new probability to the Copernican hypotheſis. The obſervations of Caſſini ſeem to eſtabliſh it as a law of the ſyſtem, that, when one body revolved round another, it deſcribed equal areas in equal times; and that, when ſeveral revolved round the ſame body, the ſquares of their periodic times were as the cubes of their

diſtances. If the Earth and the Five Planets were ſuppoſed to revolve round the Sun, theſe laws, it was ſaid, would take place univerſally. But if, according to the ſyſtem of Ptolemy, the Sun, Moon, and Five Planets were ſuppoſed to revolve round the Earth, the periodical motions of the Sun and Moon would, indeed, obſerve the firſt of theſe laws, would each of them deſcribe equal areas in equal times; but they would not obſerve the ſecond, the ſquares of their periodic times would not be as the cubes of their diſtances: and the revolutions of the Five Planets would obſerve neither the one law nor the other. Or if, according to the ſyſtem of Tycho Brahe, the Five Planets were ſuppoſed to revolve round the Sun, while the Sun and Moon revolved round the Earth, the revolutions of the Five Planets round the Sun, would, indeed, obſerve both theſe laws; but thoſe of the Sun and Moon round the Earth would obſerve only the firſt of them. The analogy of nature, therefore, could be preſerved completely, according to no other ſyſtem but that of Copernicus, which, upon that account, muſt be the true one. This argument is regarded by Voltaire, and the Cardinal of Polignac, as an irrefragable demonſtration; even M'Laurin, who was more capable of judging; nay, Newton himſelf, ſeems to mention it as one of the principal evidences for the truth of

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that hypothesis. Yet, an analogy of this kind, it would seem, far from a demonstration, could afford, at most, but the shadow of a probability.

It is true, that though Cassini supposed the Planets to revolve in an oblong curve, it was in a curve somewhat different from that of Kepler. In the ellipse the sum of the two lines, which are drawn from any one point in the circumference to the two foci, is always equal to that of those which are drawn from any other point in the circumference to the same foci. In the curve of Cassini, it is not the sum of the lines, but the rectangles which are contained under the lines, that are always equal. As this, however, was a proportion more difficult to be comprehended than the other, the curve of Cassini has never had the vogue.

Nothing now embarrassed the system of Copernicus, but the difficulty which the imagination felt in conceiving bodies so immensely ponderous as the Earth, and the other Planets, revolving round the Sun with such incredible rapidity. It was in vain that Copernicus pretended, that, notwithstanding the prejudices of sense, this circular motion might be as natural to the Planets, as it is to a stone to fall to the ground. The imagination had been accustomed to conceive such objects as tending rather to rest than motion.

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This habitual idea of their natural inertneſs was incompatible with that of their natural motion. It was in vain that Kepler, in order to aſſiſt the fancy in connecting together this natural inertneſs with their aſtoniſhing velocities, talked of ſome vital and immaterial virtue, which was ſhed by the Sun into the ſurrounding ſpaces, which was whirled about with his revolution round his own axis, and which, taking hold of the Planets, forced them, in ſpite of their ponderouſneſs and ſtrong propenſity to reſt, thus to whirl about the center of the ſyſtem. The imagination had no hold of this immaterial virtue, and and could form no determinate idea of what it conſiſted in. The imagination, indeed, felt a gap, or interval, betwixt the conſtant motion and the ſuppoſed inertneſs of the Planets, and had in this, as in all other caſes, ſome general idea or apprehenſion that there muſt be a connecting chain of intermediate objects to link together theſe diſcordant qualities. Wherein this connecting chain conſiſted, it was, indeed, at a loſs to conceive; nor did the doctrine of Kepler lend it any aſſiſtance in this reſpect. That doctrine, like almoſt all thoſe of the philoſophy in faſhion during his time, beſtowed a name upon this inviſible chain, called it an immaterial virtue, but afforded no determinate idea of what was its nature.

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Des Cartes was the firſt who attempted to aſcertain, preciſely, wherein this inviſible chain conſiſted, and to afford the imagination a train of intermediate events, which, ſucceeding each other in an order that was of all others the moſt familiar to it, ſhould unite thoſe incoherent qualities, the rapid motion, and the natural inertneſs of the Planets. Des Cartes was the firſt who explained wherein conſiſted the real inertneſs of matter; that it was not in an averſion to motion, or in a propenſity to reſt, but in a power of continuing indifferently either at reſt or in motion, and of reſiſting, with a certain force, whatever endeavoured to change its ſtate from the one to the other. According to that ingenious and fanciful philoſopher, the whole of infinite ſpace was full of matter, for with him matter and extenſion were the ſame, and conſequently there could be no void. This immenſity of matter, he ſuppoſed, to be divided into an infinite number of very ſmall cubes; all of which, being whirled about upon their own centers, neceſſarily gave occaſion to the production of two different elements. The firſt conſiſted of thoſe angular parts, which, having been neceſſarily rubbed off, and grinded yet ſmaller by their mutual friction, conſtituted the moſt ſubtle and moveable part of matter. The ſecond conſiſted of thoſe little globules that

thatwere formed by the rubbing off of the firſt. The interſtices betwixt theſe globules of the ſecond element was filled up by the particles of the firſt. But in the infinite colliſions, which muſt occur in an infinite ſpace filled with matter, and all in motion, it muſt neceſſarily happen, that many of the globules of the ſecond element ſhould be broken and grinded down into the firſt. The quantity of the firſt element having thus been encreaſed beyond what was ſufficient to fill up the interſtices of the ſecond, it muſt, in many places, have been heaped up together, without any mixture of the ſecond along with it. Such, according to Des Cartes, was the original diviſion of matter. Upon this infinitude of matter thus divided, a certain quantity of motion was originally impreſſed by the Creator of all things, and the laws of motion were ſo adjuſted as always to preſerve the ſame quantity in it, without increaſe, and without diminution. Whatever motion was loſt by one part of matter, was communicated to ſome other; and whatever was acquired by one part of matter, was derived from ſome other: and thus, through an eternal revolution, from reſt to motion, and from motion to reſt, in every part of the univerſe, the quantity of motion in the whole was always the ſame.

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But, as there was no void, no one part of matter could be moved without thrusting some other out of its place, nor that without thrusting some other, and so on. To avoid, therefore, an infinite progress, he supposed, that the matter which any body pushed before it, rolled immediately backwards, to supply the place of that matter which flowed in behind it; as we may observe in the swimming of a fish, that the water which it pushes before it, immediately rolls backwards, to supply the place of what flows in behind it, and thus forms a small circle or vortex round the body of the fish. It was, in the same manner, that the motion originally impressed by the Creator upon the infinitude of matter, necessarily produced in it an infinity of greater and smaller vortices, or circular streams: and the law of motion being so adjusted as always to preserve the same quantity of motion in the universe, those vortices either continued for ever, or by their dissolution gave birth to others of the same kind. There was, thus, at all times, an infinite number of greater and smaller vortices, or circular streams, revolving in the universe.

But, whatever moves in a circle, is constantly endeavouring to fly off from the center of s revolution. For the natural motion of all bodies is in a straight line. All the particles

ticles of matter, therefore, in each of those greater vortices, were continually preſſing from the center to the circumference, with more or leſs force, according to the different degrees of their bulk and ſolidity. The larger and more ſolid globules of the ſecond element forced themſelves upwards to the circumference, while the ſmaller, more yielding, and more active particles of the firſt, which could flow, even through the interſtices of the ſecond, were forced downwards to the center. They were forced downwards to the center, notwithſtanding their natural tendency was upwards to the circumference; for the ſame reaſon that a piece of wood, when plunged in water, is forced upwards to the ſurface, notwithſtanding its natural tendency is downwards to the bottom; becauſe its tendency downwards is leſs ſtrong than that of the particles of water, which, therefore, if one may ſay ſo, preſs in before it, and thus force it upwards. But there being a greater quantity of the firſt element than what was neceſſary to fill up the interſtices of the ſecond, it was neceſſarily accumulated in the center of each of theſe great circular ſtreams, and formed there the fiery and active ſubſtance of the Sun. For, according to that philoſopher, the Solar Syſtems were infinite in number, each Fixed Star being the center of one: and he is among the

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firſt of the moderns, who thus took away the boundaries of the Univerſe; even Copernicus and Kepler, themſelves, having confined it within, what they ſuppoſed, the vault of the Firmament.

The center of each vortex being thus occupied by the moſt active and moveable parts of matter, there was neceſſarily among them, a more violent agitation than in any other part of the vortex, and this violent agitation of the center cheriſhed and ſupported the movement of the whole. But, among the particles of the firſt element, which fill up the interſtices of the ſecond, there are many, which, from the preſſure of the globules on all ſides of them, neceſſarily receive an angular form, and thus conſtitute a third element of particles leſs fit for motion than thoſe of the other two. As the particles, however, of this third element were formed in the interſtices of the ſecond, they are neceſſarily ſmaller than thoſe of the ſecond, and are, therefore, along with thoſe of the firſt, urged down towards the center, where, when a number of them happen to take hold of one another, they form ſuch ſpots upon the ſurface of the accumulated particles of the firſt element, as are often diſcovered by teleſcopes upon the face of that Sun, which enlightens and animates our particular ſyſtem. Thoſe ſpots are often broken and diſpelled, by the violent agitation of the particles

particles of the firſt element, as has hitherto happily been the caſe with thoſe which have ſucceſſively been formed upon the face of our Sun. Sometimes, however, they encruſt the whole ſurface of that fire which is accumulated in the center; and the communication betwixt the moſt active and the moſt inert parts of the vortex being thus interrupted, the rapidity of its motion immediately begins to languiſh, and can no longer defend it from being ſwallowed up and carried away by the ſuperior violence of ſome other like circular ſtream; and in this manner, what was once a Sun, becomes a Planet. Thus, the time was, according to this ſyſtem, when the Moon was a body of the ſame kind with the Sun, the fiery center of a circular ſtream of ether, which flowed continually round her; but her face having been cruſted over by a congeries of angular particles, the motion of this circular ſtream began to languiſh, and could no longer defend itſelf from being abſorbed by the more violent vortex of the Earth, which was then, too, a Sun, and which chanced to be placed in its neighbourhood. The Moon, therefore, became a Planet, and revolved round the Earth. In proceſs of time, the ſame fortune, which had thus befallen the Moon, befell alſo the Earth; its face was encruſted by a groſs and inactive ſubſtance; the motion of its vortex began to

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languiſh, and it was abſorbed by the greater vortex of the Sun: but though the vortex of the Earth had thus become languid, it ſtill had force enough to occaſion both the diurnal revolution of the Earth, and the monthly motion of the Moon. For a ſmall circular ſtream may eaſily be conceived as flowing round the body of the Earth, at the ſame time that it is carried along by that great ocean of ether which is continually revolving round the Sun; in the ſame manner, as in a great whirlpool of water, one may often ſee ſeveral ſmall whirlpools, which revolve round centers of their own, and at the ſame time are carried round the center of the great one. Such was the cauſe of the original formation and conſequent motions of the Planetary Syſtem. When a ſolid body is turned round its center, thoſe parts of it, which are neareſt, and thoſe which are remoteſt from the center, complete their revolutions in one and the ſame time. But it is otherwiſe with the revolutions of a fluid; the parts of it which are neareſt the center complete their revolutions in a ſhorter time, than thoſe which are remoter. The Planets, therefore, all floating, in that immenſe tide of ether which is continually ſetting in from weſt to eaſt round the body of the Sun, complete their revolutions in a longer or a ſhorter time, according to their nearneſs or diſtance from him. There

was,

was, however, according to Des Cartes, no very exact proportion obſerved betwixt the times of their revolutions and their diſtances from the center. For that nice analogy, which Kepler had diſcovered betwixt them, having not yet been confirmed by the obſervations of Caſſini, was, as I before took notice, entirely diſregarded by Des Cartes. According to him, too, their orbits might not be perfectly circular, but be longer the one way than the other, and thus approach to an Ellipſe. Nor yet was it neceſſary to ſuppoſe, that they deſcribed this figure with geometrical accuracy, or even that they deſcribed always preciſely the ſame figure. It rarely happens, that nature can be mathematically exact with regard to the figure of the objects ſhe produces, upon account of the infinite combinations of impulſes, which muſt conſpire to the production of each of her effects. No two Planets, no two animals of the ſame kind, have exactly the ſame figure, nor is that of any one of them perfectly regular. It was in vain, therefore, that aſtronomers laboured to find that perfect conſtancy and regularity in the motions of the heavenly bodies, which is to be found in no other parts of nature. Theſe motions, like all others, muſt either languiſh or be accelerated, according as the cauſe which produces them, the revolution of the vortex of the Sun, either languiſhes,

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or is accelerated; and there are innumerable events which may occaſion either the one or the other of thoſe changes.

It was thus, that Des Cartes endeavoured to render familiar to the imagination, the greateſt difficulty in the Copernican ſyſtem, the rapid motion of the enormous bodies of the Planets. When the fancy had thus been taught to conceive them as floating in an immenſe ocean of ether, it was quite agreeable to its uſual habits to conceive, that they ſhould follow the ſtream of this ocean, how rapid ſoever. This was an order of ſucceſſion to which it had been long accuſtomed, and with which it was, therefore, quite familiar. This account, too, of the motions of the Heavens, was connected with a vaſt, an immenſe ſyſtem, which joined together a greater number of the moſt diſcordant phænomena of nature, than had been united by any other hypotheſis; a ſyſtem in which the principles of connection, though perhaps equally imaginary, were, however, more diſtinct and determinate, than any that had been known before; and which attempted to trace to the imagination, not only the order of ſucceſſion by which the heavenly bodies were moved, but that by which they, and almoſt all other natural objects, had originally been produced.—The Carteſian philoſophy begins now to be almoſt univerſally rejected, while the Copernican ſyſtem continues to be uni-

verſally

verſally received. Yet it is not eaſy to imagine, how much probability and coherence this admired ſyſtem was long ſuppoſed to derive from that exploded hypotheſis. Till Des Cartes had publiſhed his principles, the disjointed and incoherent ſyſtem of Tycho Brahe, though it was embraced heartily and completely by ſcarce any body, was yet conſtantly talked of by all the learned, as, in point of probability, upon a level with that of Copernicus. They took notice, indeed, of its inferiority with regard to coherence and connection, expreſſing hopes, however, that theſe defects might be remedied by ſome future improvements. But when the world beheld that complete, and almoſt perfect coherence, which the philoſophy of Des Cartes beſtowed upon the ſyſtem of Copernicus, the imaginations of mankind could no longer refuſe themſelves the pleaſure of going along with ſo harmonious an account of things. The ſyſtem of Tycho Brahe was every day leſs and leſs talked of, till at laſt it was forgotten altogether.

The ſyſtem of Des Cartes, however, though it connected together the real motions of the heavenly bodies according to the ſyſtem of Copernicus, more happily than had been done before, did ſo only when they were conſidered in the groſs; but did not apply to them, when they were regarded in the detail. Des Cartes,

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Cartes, as was ſaid before, had never himſelf obſerved the Heavens with any particular application. Though he was not ignorant, therefore, of any of the obſervations which had been made before his time, he ſeems to have paid them no great degree of attention; which, probably, proceeded from his own inexperience in the ſtudy of Aſtronomy. So far, therefore, from accommodating his ſyſtem to all the minute irregularities, which Kepler had aſcertained in the movements of the Planets; or from ſhewing, particularly, how theſe irregularities, and no other, ſhould ariſe from it, he contented himſelf with obſerving, that perfect uniformity could not be expected in their motions, from the nature of the cauſes which produced them; that certain irregularities might take place in them, for a great number of ſucceſſive revolutions, and afterwards give way to others of a different kind: a remark which, happily, relieved him from the neceſſity of applying his ſyſtem to the obſervations of Kepler, and the other Aſtronomers.

But when the obſervations of Caſſini had eſtabliſhed the authority of thoſe laws, which Kepler had firſt diſcovered in the ſyſtem, the philoſophy of Des Cartes, which could afford no reaſon why ſuch particular laws ſhould be obſerved, might continue to amuſe the learned in other ſciences, but could no longer ſatisfy

thoſe

thoſe that were ſkilled in Aſtronomy. Sir Iſaac Newton firſt attempted to give a phyſical account of the motions of the Planets, which ſhould accommodate itſelf to all the conſtant irregularities which aſtronomers had ever obſerved in their motions. The phyſical connection, by which Des Cartes had endeavoured to bind together the movements of the Planets, was the laws of impulſe; of all the orders of ſucceſſion, thoſe which are moſt familiar to the imagination; as they all flow from the inertneſs of matter. After this quality, there is no other, with which we are ſo well acquainted, as that of gravity. We never act upon matter, but we have occaſion to obſerve it. The ſuperior genius and ſagacity of Sir Iſaac Newton, therefore, made the moſt happy, and, we may now ſay, the greateſt and moſt admirable improvement that was ever made in philoſophy, when he diſcovered, that he could join together the movements of the Planets by ſo familiar a principle of connection, which completely removed all the difficulties the imagination had hitherto felt in attending to them. He demonſtrated, that, if the Planets were ſuppoſed to gravitate towards the Sun, and to one another, and at the ſame time to have had a projecting force originally impreſſed upon them, the primary ones might all deſcribe ellipſes in one of the foci of which that great luminary was placed; and

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and the ſecondary ones might deſcribe figures of the ſame kind round their reſpective primaries, without being diſturbed by the continual motion of the centers of their revolutions. That if the force, which retained each of them in their orbits, was like that of gravity, and directed towards the Sun, they would, each of them, deſcribe equal areas in equal times. That if this attractive power of the Sun, like all other qualities which are diffuſed in rays from a center, diminiſhed in the ſame proportion as the ſquares of the diſtances increaſed, their motions would be ſwifteſt when neareſt the Sun, and ſloweſt when fartheſt off from him, in the ſame proportion in which, by obſervation, they are diſcovered to be; and that upon the ſame ſuppoſition, of this gradual diminution of their reſpective gravities, their periodic times would bear the ſame proportion to their diſtances, which Kepler and Caſſini had eſtabliſhed betwixt them. Having thus ſhown, that gravity might be the connecting principle which joined together the movements of the Planets, he endeavoured next to prove that it really was ſo. Experience ſhews us, what is the power of gravity near the ſurface of the Earth. That it is ſuch as to make a body fall, in the firſt ſecond of its deſcent, through about fifteen Pariſian feet. The Moon is about ſixty ſemidiameters of the Earth diſtant from its ſurface. If gravity, therefore, was

ſuppoſed to diminiſh, as the ſquares of the diſtance increaſe, a body, at the Moon, would fall towards the Earth in a minute; that is, in ſixty ſeconds, through the ſame ſpace, which it falls near its ſurface in one ſecond. But the arch which the Moon deſcribes in a minute, falls, by obſervation, about fifteen Pariſian feet below the tangent drawn at the beginning of it. So far, therefore, the Moon may be conceived as conſtantly falling towards the Earth.

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The ſyſtem of Sir Iſaac Newton correſponded to many other irregularities which Aſtronomers had obſerved in the Heavens. It aſſigned a reaſon, why the centers of the revolutions of the Planets were not preciſely in the center of the Sun, but in the common center of gravity of the Sun and the Planets. From the mutual attraction of the Planets, it gave a reaſon for ſome other irregularities in their motions; irregularities, which are quite ſenſible in thoſe of Jupiter and Saturn, when thoſe Planets are nearly in conjunction with one another. But of all the irregularities in the Heavens, thoſe of the Moon had hitherto given the greateſt perplexity to Aſtronomers; and the ſyſtem of Sir Iſaac Newton correſponded, if poſſible, yet more accurately with them than with any of the other Planets. The Moon, when either in conjunction, or in oppoſition to the

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Sun, appears furthest from the Earth, and nearest to it when in her quarters. According to the system of that philosopher, when she is in conjunction with the Sun, she is nearer the Sun than the Earth is; consequently, more attracted to him, and, therefore, more separated from the Earth. On the contrary, when in opposition to the Sun, she is further from the Sun than the Earth. The Earth, therefore, is more attracted to the Sun; and consequently, in this case, too, further separated from the Moon. But, on the other hand, when the Moon is in her quarters, the Earth and the Moon, being both at equal distance from the Sun, are equally attracted to him. They would not, upon this account alone, therefore, be brought nearer to one another. As it is not in parallel lines, however, that they are attracted towards the Sun, but in lines, which meet in his center, they are, thereby, still further approached to one another. Sir Isaac Newton computed the difference of the forces, with which the Moon and the Earth ought, in all those different situations, according to his theory, to be impelled towards one another; and found, that the different degrees of their approaches, as they had been observed by Astronomers, corresponded exactly to his computations. As the attraction of the Sun, in the conjunctions and oppositions, diminishes the gravity of the Moon towards the Earth, and,

and, consequently, makes her necessarily extend her orbit, and, therefore, require a longer periodical time to finish it. But, when the Moon and the Earth are in that part of the orbit which is nearest the Sun, this attraction of the Sun will be the greatest; consequently, the gravity of the Moon towards the Earth will there be most diminished; her orbit be most extended; and her periodic time be, therefore, the longest. This is, also, agreeable to experience, and in the very same proportion, in which, by computation, from these principles, it might be expected.

The orbit of the Moon is not precisely in the same Plane with that of the Earth; but makes a very small angle with it. The points of intersection of those two Planes, are called, the Nodes of the Moon. These Nodes of the Moon are in continual motion, and in eighteen or nineteen years, revolve backwards, from east to west, through all the different points of the Ecliptic. For the Moon, after having finished her periodical revolution, generally intersects the orbit of the Earth somewhat behind the point where she had intersected it before. But, though the motion of the Nodes is thus generally retrograde, it is not always so, but is sometimes direct, and sometimes they appear even stationary; the Moon generally intersects the Plane of the Earth's orbit, behind the point where she had intersected it

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in her former revolution; but ſhe ſometimes interſects it before that point, and ſometimes in the very ſame point. It is the ſituation of thoſe Nodes which determines the times of Eclipſes, and their motions had, upon this account, at all times, been particularly attended to by Aſtronomers. Nothing, however, had perplexed them more, than to account for theſe ſo inconſiſtent motions, and, at the ſame time, preſerve their ſo much ſought-for regularity in the revolutions of the Moon. For they had no other means of connecting the appearances together than by ſuppoſing the motions which produced them, to be, in reality, perfectly regular and equable. The hiſtory of Aſtronomy, therefore, gives an account of a greater number of theories invented for connecting together the motions of the Moon, than for connecting together thoſe of all the other heavenly bodies taken together. The theory of gravity, connected together, in the moſt accurate manner, by the different actions of the Sun and the Earth, all thoſe irregular motions; and it appears, by calculation, that the time, the quantity, and the duration of thoſe direct and retrograde motions of the Nodes, as well as of their ſtationary appearances, might be expected to be exactly ſuch, as the obſervations of Aſtronomers have determined them.

The

The ſame principle, the attraction of the Sun, which thus accounts for the motions of the Nodes, connects, too, another very perplexing irregularity in the appearances of the Moon; the perpetual variation in the inclination of her orbit to that of the Earth.

As the Moon revolves in an ellipſe, which has the centre of the Earth in one of its foci, the longer axis of its orbit is called the Line of its Apſides. This line is found, by obſervation, not to be always directed towards the ſame points of the Firmament, but to revolve forwards from weſt to eaſt, ſo as to paſs through all the points of the Ecliptic, and to complete its period in about nine years; another irregularity, which had very much perplexed Aſtronomers, but which the theory of gravity ſufficiently accounted for.

The Earth had hitherto been regarded as perfectly globular, probably for the ſame reaſon which had made men imagine, that the orbits of the Planets muſt neceſſarily be perfectly circular. But Sir Iſaac Newton, from mechanical principles, concluded, that, as the parts of the Earth muſt be more agitated by her diurnal revolution at the Equator, than at the Poles, they muſt neceſſarily be ſomewhat elevated at the firſt, and flattened at the ſecond. The obſervation, that the oſcillations of pendulums were ſlower at the Equator than at the Poles, ſeeming to demonſtrate, that gravity was ſtronger at the Poles, and

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weaker at the Equator, proved, he thought, that the Equator was further from the centre than the Poles. All the meafures, however, which had hitherto been made of the Earth, feemed to fhow the contrary, that it was drawn out towards the Poles, and flattened towards the Equator. Newton, however, preferred his mechanical computations to the former meafures of Geographers and Aftronomers; and in this he was confirmed by the obfervations of Aftronomers on the figure of Jupiter, whofe diameter at the Pole feems to be to his diameter at the Equator, as twelve to thirteen; a much greater inequality than could be fuppofed to take place betwixt the correfpondent diameters of the Earth, but which was exactly proportioned to the fuperior bulk of Jupiter, and the fuperior rapidity with which he performs his diurnal revolutions. The obfervations of Aftronomers at Lapland and Peru have fully confirmed Sir Ifaac's fyftem, and have not only demonftrated, that the figure of the Earth is, in general, fuch as he fuppofed it; but that the proportion of its axis to the diameter of its Equator is almoft precifely fuch as he had computed it. And of all the proofs that have ever been adduced of the diurnal revolution of the Earth, this perhaps is the moft folid and fatisfactory.

Hipparchus, by comparing his own obfervations with thofe of fome former Aftrono-

mers, had found that the equinoxial points were not always oppofite to the fame part of the Heavens, but that they advanced gradually eaftward by fo flow a motion, as to be fcarce fenfible in one hundred years, and which would require thirty-fix thoufand to make a complete revolution of the Equinoxes, and to carry them fucceffively through all the different points of the Ecliptic. More accurate obfervations difcovered that this proceffion of the Equinoxes was not fo flow as Hipparchus had imagined it, and that it required fomewhat lefs than twenty-fix thoufand years to give them a complete revolution. While the ancient fyftem of Aftronomy, which repreffented the Earth as the immoveable centre of the univerfe, took place, this appearance was neceffarily accounted for, by fuppofing that the Firmament, befides its rapid diurnal revolution round the poles of the Equator, had likewife a flow periodical one round thofe of the Ecliptic. And when the fyftem of Hipparchus was by the fchoolmen united with the folid Spheres of Ariftotle, they placed a new chriftalline Sphere above the Firmament, in order to join this motion to the reft. In the Copernican fyftem, this appearance had hitherto been connected with the other parts of that hypothefis, by fuppofing a fmall revolution in the Earth's axis from eaft to weft. Sir Ifaac Newton connected this motion by

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the ſame principle of gravity, by which he had united all the others, and ſhewed, how the elevation of the parts of the Earth at the Equator muſt, by the attraction of the Sun, produce the ſame retrograde motion of the Nodes of the Ecliptic, which it produced of the Nodes of the Moon. He computed the quantity of motion which could ariſe from this action of the Sun, and his calculations here too entirely correſponded with the obſervations of Aſtronomers.

Comets had hitherto, of all the appearances in the Heavens, been the leaſt attended to by Aſtronomers. The rarity and inconſtancy of their appearance, ſeemed to ſeparate them entirely from the conſtant, regular, and uniform objects in the Heavens, and to make them reſemble more the inconſtant, tranſitory, and accidental pheænomena of thoſe regions that are in the neighbourhood of the Earth. Ariſtotle, Eudoxus, Hipparchus, Ptolemy, and Purbach, therefore, had all degraded them below the Moon, and ranked them among the meteors of the upper regions of the air. The obſervations of Tycho Brahe demonſtrated, that they aſcended into the celeſtial regions, and were often higher than Venus or the Sun. Des Cartes, at random, ſuppoſed them to be always higher than even the orbit of Saturn; and ſeems, by the ſuperior elevation he thus beſtowed upon them, to have been willing to com-

compenſate that unjuſt degradation which they had ſuffered for ſo many ages before. The obſervations of ſome later Aſtronomers demonſtrated, that they too revolved about the Sun, and might therefore be parts of the Solar Syſtem. Newton accordingly applied his mechanical principle of gravity to explain the motions of theſe bodies. That they deſcribed equal areas in equal times, had been diſcovered by the obſervations of ſome later Aſtronomers; and Newton endeavoured to ſhow how from this principle, and thoſe obſervations, the nature and poſition of their ſeveral orbits might be aſcertained, and their periodic times determined. His followers have, from his principles, ventured even to predict the returns of ſeveral of them, particularly of one which is to make its appearance in 1758*. We muſt wait for that time before we can determine, whether his philoſophy correſponds as happily to this part of the ſyſtem as to all the others. In the mean time, however, the ductility of this principle, which applied itſelf ſo happily to theſe, the moſt irregular of all the celeſtial appearances, and which has introduced ſuch complete coherence into the motions of all the Heavenly Bodies, has ſerved

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* It muſt be obſerved, that the whole of this Eſſay was written previous to the date here mentioned; and that the return of the comet happened agreeably to the prediction.

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T. not a little to recommend it to the imagin
tions of mankind.

But of all the attempts of the Newtonia philoſophy, that which would appear to be th moſt above the reach of human reaſon an experience, is the attempt to compute th weights and denſities of the Sun, and of th ſeveral Planets. An attempt, however, whic was indiſpenſibly neceſſary to complete th coherence of the Newtonian ſyſtem. Th power of attraction which, according to th theory of gravity, each body poſſeſſes, is i proportion to the quantity of matter containe in that body. But the periodic time in whic one body, at a given diſtance, revolves roun another that attracts it, is ſhorter in proportio as this power is greater, and conſequently a the quantity of matter in the attracting body If the denſities of Jupiter and Saturn wer the ſame with that of the Earth, the periodi times of their ſeveral Satellites would be ſhorte than by obſervation they are found to be Becauſe the quantity of matter, and conſe quently the attracting power of each of them would be as the cubes of their diameters. By comparing the bulks of thoſe Planets, and th periodic times of their Satellites, it is foun that, upon the hypotheſis of gravity, the den ſity of Jupiter muſt be greater than that o Saturn, and the denſity of the Earth greate

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than that of Jupiter. This ſeems to eſtabliſh it as a law in the ſyſtem, that the nearer the ſeveral Planets approach to the Sun, the denſity of their matter is the greater: a conſtitution of things which would ſeem to be the moſt advantageous of any that could have been eſtabliſhed; as water of the ſame denſity with that of our Earth, would freeze under the Equator of Saturn, and boil under that of Mercury.

Such is the ſyſtem of Sir Iſaac Newton, a ſyſtem whoſe parts are all more ſtrictly connected together, than thoſe of any other philoſophical hypotheſis. Allow his principle, the univerſality of gravity, and that it decreaſes as the ſquares of the diſtance increaſe, and all the appearances, which he joins together by it, neceſſarily follow. Neither is their connection merely a general and looſe connection, as that of moſt other ſyſtems, in which either theſe appearances, or ſome ſuch like appearances, might indifferently have been expected. It is every where the moſt preciſe and particular that can be imagined, and aſcertains the time, the place, the quantity, the duration of each individual phænomenon, to be exactly ſuch as, by obſervation, they have been determined to be. Neither are the principles of union, which it employs, ſuch as the imagination can find any difficulty in going along with. The gravity of matter is, of all its qualities,

SECT IV.

qualities, after its inertness, that which is most familiar to us. We never act upon it without having occasion to observe this property. The law too, by which it is supposed to diminish as it recedes from its centre, is the same which takes place in all other qualities which are propagated in rays from a centre, in light, and in every thing else of the same kind. It is such, that we not only find that it does take place in all such qualities, but we are necessarily determined to conceive that, from the nature of the thing, it must take place. The opposition which was made in France, and in some other foreign nations, to the prevalence of this system, did not arise from any difficulty which mankind naturally felt in conceiving gravity as an original and primary mover in the constitution of the universe. The Cartesian system, which had prevailed so generally before it, had accustomed mankind to conceive motion as never beginning, but in consequence of impulse, and had connected the descent of heavy bodies, near the surface of the Earth, and the other Planets, by this more general bond of union; and it was the attachment the world had conceived for this account of things, which indispposed them to that of Sir Isaac Newton. His system, however, now prevails over all opposition, and has advanced to the acquisition of the most universal empire that was ever established in philosophy. His principles,

ciples, it muſt be acknowledged, have a degree of firmneſs and ſolidity that we ſhould in vain look for in any other ſyſtem. The moſt ſceptical cannot avoid feeling this. They not only connect together moſt perfectly all the phænomena of the Heavens, which had been obſerved before his time; but thoſe alſo which the perſevering induſtry and more perfect inſtruments of later Aſtronomers have made known to us have been either eaſily and immediately explained by the application of his principles, or have been explained in conſequence of more laborious and accurate calculations from theſe principles, than had been inſtituted before. And even we, while we have been endeavouring to repreſent all philoſophical ſyſtems as mere inventions of the imagination, to connect together the otherwiſe disjointed and diſcordant phænomena of nature, have inſenſibly been drawn in, to make uſe of language expreſſing the connecting principles of this one, as if they were the real chains which Nature makes uſe of to bind together her ſeveral operations. Can we wonder then, that it ſhould have gained the general and complete approbation of mankind, and that it ſhould now be conſidered, not as an attempt to connect in the imagination the phænomena of the Heavens, but as the greateſt diſcovery that ever was made by man, the diſcovery of an immenſe chain of the moſt im-

SECT. IV.

SECT. IV. important and ſublime truths, all cloſely connected together, by one capital fact, of the reality of which we have daily experience.

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NOTE by the EDITORS.

The Author, at the end of this Eſſay, left ſome Notes and Memorandums, from which it appears, that he conſidered this laſt part of his Hiſtory of Aſtronomy as imperfect, and needing ſeveral additions. The Editors, however, choſe rather to publiſh than ſuppreſs it. It muſt be viewed, not as a Hiſtory or Account of Sir Iſaac Newton's Aſtronomy, but chiefly as an additional illuſtration of thoſe Principles in the Human Mind which Mr. Smith has pointed out to be the univerſal motives of Philoſophical Reſearches.

THE

PRINCIPLES

WHICH LEAD AND DIRECT

PHILOSOPHICAL ENQUIRIES;

ILLUSTRATED BY THE

HISTORY OF THE ANCIENT PHYSICS.

HISTORY

OF THE

ANCIENT PHYSICS.

FROM arranging and methodizing the Syſtem of the Heavens, Philoſophy deſcended to the conſideration of the inferior parts of Nature, of the Earth, and of the bodies which immediately ſurround it. If the objects, which were here preſented to its view, were inferior in greatneſs or beauty, and therefore leſs apt to attract the attention of the mind, they were more apt, when they came to be attended to, to embarraſs and perplex it, by the variety of their ſpecies, and by the intricacy and ſeeming irregularity of the laws or orders of their ſucceſſion. The ſpecies of objects in the Heavens are few in number; the Sun, the Moon, the Planets, and the Fixed Stars, are all which thoſe philoſophers could diſtinguiſh. All the changes too, which are ever obſerved in theſe bodies, evidently ariſe from ſome difference in the velocity and direction of their ſeveral motions; but the variety of meteors in the air, of clouds, rain-

bows, thunder, lightning, winds, rain, hail, ſnow, is vaſtly greater; and the order of their ſucceſſion ſeems to be ſtill more irregular and unconſtant. The ſpecies of foſſils, minerals, plants, animals, which are found in the Waters, and near the ſurface of the Earth, are ſtill more intricately diverſified; and if we regard the different manners of their production, their mutual influence in altering, deſtroying, ſupporting one another, the orders of their ſucceſſion ſeem to admit of an almoſt infinite variety. If the imagination, therefore, when it conſidered the appearances in the Heavens, was often perplexed, and driven out of its natural career, it would be much more expoſed to the ſame embarraſſment, when it directed its attention to the objects which the Earth preſented to it, and when it endeavoured to trace their progreſs and ſucceſſive revolutions.

To introduce order and coherence into the mind's conception of this ſeeming chaos of diſſimilar and diſjointed appearances, it was neceſſary to deduce all their qualities, operations, and laws of ſucceſſion, from thoſe of ſome particular things, with which it was perfectly acquainted and familiar, and along which its imagination could glide ſmoothly and eaſily, and without interruption. But as we would in vain atttempt to deduce the heat of a ſtove from that of an open chimney, unleſs

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we could ſhow that the ſame fire which was expoſed in the one, lay concealed in the other; ſo it was impoſſible to deduce the qualities and laws of ſucceſſion, obſerved in the more uncommon appearances of Nature, from thoſe of ſuch as were more familiar, if thoſe cuſtomary objects were not ſuppoſed, however diſguiſed in their appearance, to enter into the compoſition of thoſe rarer and more ſingular phænomena. To render, therefore, this lower part of the great theatre of nature a coherent ſpectacle to the imagination, it became neceſſary to ſuppoſe, firſt, That all the the ſtrange objects of which it conſiſted were made up out of a few, with which the mind was extremely familiar: and ſecondly, That all their qualities, operations and rules of ſucceſſion, were no more than different diverſifications of thoſe to which it had long been accuſtomed, in theſe primary and elementary objects.

Of all the bodies of which theſe inferior parts of the univerſe ſeem to be compoſed, thoſe with which we are moſt familiar, are the Earth, which we tread upon; the Water which we every day uſe; the Air, which we conſtantly breathe; and the Fire, whoſe benign influence is not only required for preparing the common neceſſaries of life, but for the continual ſupport of that vital principle which actuates both plants and animals. Theſe,

therefore, were by Empedocles, and the other philoſophers of the Italian ſchool, ſuppoſed to be the elements, out of which, at leaſt, all the inferior parts of nature were compoſed. The familiarity of thoſe bodies to the mind, naturally diſpoſed it to look for ſome reſemblance to them in whatever elſe was preſented to its conſideration. The diſcovery of ſome ſuch reſemblance united the new object to an aſſortment of things, with which the imagination was perfectly acquainted. And if any analogy could be obſerved betwixt the operations and laws of ſucceſſion of the compound, and thoſe of the ſimple objects, the movement of the fancy, in tracing their progreſs, became quite ſmooth, and natural, and eaſy. This natural anticipation, too, was ſtill more confirmed by ſuch a ſlight and inaccurate analyſis of things, as could be expected in the infancy of ſcience, when the curioſity of mankind, graſping at an account of all things before it had got full ſatisfaction with regard to any one, hurried on to build, in imagination, the immenſe fabric of the univerſe. The heat, obſerved in both plants and animals, ſeemed to demonſtrate, that Fire made a part of their compoſition. Air was not leſs neceſſary for the ſubſiſtence of both, and ſeemed, too, to enter into the fabric of animals by reſpiration, and into that of plants by ſome other means. The juices which circulated through them

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ſhowed how much of their texture was owing to Water. And their reſolution into Earth by putrefaction diſcovered that this element had not been left out in their original formation. A ſimilar analyſis ſeemed to ſhew the ſame principles in moſt other compound bodies.

The vaſt extent of thoſe bodies ſeemed to render them, upon another account, proper to be the great ſtores out of which nature compounded all the other ſpecies of things. Earth and Water divide almoſt the whole of the terreſtrial globe between them. The thin tranſparent covering of the Air ſurrounds it to an immenſe height upon all ſides. Fire, with its attendant, light, ſeems to deſcend from the celeſtial regions, and might, therefore, either be ſuppoſed to be diffuſed through the whole of thoſe ætherial ſpaces, as well as to be condenſed and conglobated in thoſe luminous bodies, which ſparkle acroſs them, as by the Stoics; or, to be placed immediately under the ſphere of the Moon, in the region next below them, as by the Peripatetics, who could not reconcile the devouring nature of Fire with the ſuppoſed unchangeable eſſence of their ſolid and cryſtalline ſpheres.

The qualities, too, by which we are chiefly accuſtomed to characterize and diſtinguiſh natural bodies, are all of them found, in the higheſt degree in thoſe Four Elements. The

great diviſions of the objects, near the ſurface of the Earth, are thoſe into hot and cold, moiſt and dry, light and heavy. Theſe are the moſt remarkable properties of bodies; and it is upon them that many of their other moſt ſenſible qualities and powers ſeem to depend. Of theſe, heat and cold were naturally enough regarded by thoſe firſt enquirers into nature, as the active, moiſture and dryneſs, as the paſſive qualities of matter. It was the temperature of heat and cold which ſeemed to occaſion the growth and diſſolution of plants and animals; as appeared evident from the effects of the change of the ſeaſons upon both. A proper degree of moiſture and dryneſs was not leſs neceſſary for theſe purpoſes; as was evident from the different effects and productions of wet and dry ſeaſons and ſoils. It was the heat and cold, however, which actuated and determined thoſe two otherwiſe inert qualities of things, to a ſtate either of reſt or motion. Gravity and levity were regarded as the two principles of motion, which directed all ſublunary things to their proper place: and all thoſe ſix qualities, taken together, were, upon ſuch an inattentive view of nature, as muſt be expected in the beginnings of philoſophy, readily enough apprehended to be capable of connecting together the moſt remarkable revolutions, which occur in theſe

inferior parts of the univerſe. Heat and dryneſs were the qualiti hich characterized the element of Fire; h and moiſture that of Air; moiſture and cold that of Water; cold and dryneſs that c Earth. The natural motion of two of theſe elements, Earth and Water, was downwards, upon account of their gravity. This tendency, however, was ſtronger in the one than in the other, upon account of the ſuperior gravity of Earth. The natural motion of the two other elements, Fire and Air, was upwards, upon account of their levity; and this tendency, too, was ſtronger in the one than in the other, upon account of the ſuperior levity of Fire. Let us not deſpiſe thoſe ancient philoſophers, for thus ſuppoſing, that theſe two elements had a poſitive levity, or a real tendency upwards. Let us remember, that this notion has an appearance of being confirmed by the moſt obvious obſervations; that thoſe facts and experiments, which demonſtrate the weight of the Air, and which no ſuperior ſagacity, but chance alone, preſented to the moderns, were altogether unknown to them; and that, what might, in ſome meaſure, have ſupplied the place of thoſe experiments, the reaſonings concerning the cauſes of the aſcent of bodies, in fluids ſpecifically heavier than themſelves, ſeem to have been unknown in the ancient world, till Archimedes diſcovered

them, long after their ſyſtem of phyſics was completed, and had acquired an eſtabliſhed reputation: that thoſe reaſonings are far from being obvious, and that by their inventor, they ſeem to have been thought applicable only to the aſcent of Solids in Water, and not even to that of Solids in Air, much leſs to that of one fluid in another. But it is this laſt only which could explain the aſcent of flame, vapours, and fiery exhalations, without the ſuppoſition of a ſpecific levity.

Thus, each of thoſe Four Elements had, in the ſyſtem of the univerſe, a place which was peculiarly allotted to it, and to which it naturally tended. Earth and Water rolled down to the centre; the Air ſpread itſelf above them; while the Fire ſoared aloft, either to the celeſtial region, or to that which was immediately below it. When each of thoſe ſimple bodies had thus obtained its proper ſphere, there was nothing in the nature of any one of them to make it paſs into the place of the other, to make the Fire deſcend into the Air, the Air into the Water, or the Water into the Earth; or, on the contrary, to bring up the Earth into the place of the Water, the Water into that of the Air, or the Air into that of the Fire. All ſublunary things, therefore, if left to themſelves, would have remained in an eternal repoſe. The revolution of the heavens, thoſe of the Sun, Moon,

Moon, and Five Planets, by producing the vicissitudes of Day and Night, and of the Seasons, prevented this torpor and inactivity from reigning through the inferior parts of nature; inflamed by the rapidity of their circumvolutions, the element of Fire, and forced it violently downwards into the Air, into the Water, and into the Earth, and thereby produced those mixtures of the different elements which kept up the motion and circulation of the lower parts of nature; occasioned, sometimes, the entire transmutation of one element into another, and sometimes the production of forms and species different from them all, and in which, though the qualities of them all might be found, they were so altered and attempered by the mixture, as scarce to be distinguishable.

Thus, if a small quantity of Fire was mixed with a great quantity of Air, the moisture and moderate warmth of the one entirely surmounted and changed into their own essence the intense heat and dryness of the other; and the whole aggregate became Air. The contrary of which happened, if a small quantity of Air was mixed with a great quantity of Fire: the whole, in this case, became Fire. In the same manner, if a small quantity of Fire was mixed with a great quantity of Water, then, either the moisture and cold of the Water might surmount the heat

heat and dryneſs of the Fire, ſo as that the whole ſhould become Water; or, the moiſture of the Water might ſurmount the dryneſs of the Fire, while, in its turn, the heat of the Fire ſurmounted the coldneſs of the Water, ſo as that the whole aggregate, its qualities being heat and moiſture, ſhould become Air, which was regarded as the more natural and eaſy metamorphoſis of the two. In the ſame manner they explained how like changes were produced by the different mixtures of Fire and Earth, Earth and Water, Water and Air, Air and Earth; and thus they connected together the ſucceſſive tranſmutations of the elements into one another.

Every mixture of the Elements, however, did not produce an entire tranſmutation. They were ſometimes ſo blended together, that the qualities of the one, not being able to deſtroy, ſerved only to attemper thoſe of the other. Thus Fire, when mixed with Water, produced ſometimes a watery vapour, whoſe qualities were heat and moiſture; which partook at once of the levity of the Fire, and of the gravity of the Water, and which was elevated by the firſt into the Air, but retained by the laſt from aſcending into the region of Fire. The relative cold, which they ſuppoſed prevailed in the middle region of the Air, upon account of its equal diſtance, both from the region of Fire, and from the

the rays that are reflected by the ſurface of the Earth, condenſed this vapour into Water; the Fire eſcaped it, and flew upwards, and the Water fell down in rain, or, according to the different degrees of cold that prevailed in the different ſeaſons, was ſometimes congealed into ſnow, and ſometimes into hail. In the ſame manner, Fire, when mixed with Earth, produced ſometimes a fiery exhalation, whoſe qualities were heat and dryneſs, which being elevated by the levity of the firſt into the Air condenſed by the cold, ſo as to take fire, and being at the ſame time ſurrounded by watery vapours, burſt forth into thunder and lightning, and other fiery meteors. Thus they connected together the different appearances in the Air, by the qualities of their Four Elements; and from them, too, in the ſame manner, they endeavoured to deduce all the other qualities in the other homogeneous bodies, that are near the ſurface of the Earth. Thus, to give an example, with regard to the hardneſs and ſoftneſs of bodies; heat and moiſture, they obſerved, were the great ſofteners of matter. Whatever was hard, therefore, owed that quality either to the abſence of heat, or to the abſence of moiſture. Ice, cryſtal, lead, gold, and almoſt all metals, owed their hardneſs to the abſence of heat, and were, therefore, diſſolveable by Fire. Rock-ſalt, nitre, alum, and hard clay, owed

owed that quality to the abſence of moiſture, and were therefore, diſſolveable in water. And, in the ſame manner, they endeavoured to connect together moſt of the other tangible qualities of matter. Their principles of union, indeed, were often ſuch as had no real exiſtence, and were always vague and undetermined in the higheſt degree; they were ſuch, however, as might be expected in the beginnings of ſcience, and ſuch as, with all their imperfections, could enable mankind both to think and to talk, with more coherence, concerning thoſe general ſubjects, than without them they would have been capable of doing. Neither was their ſyſtem entirely devoid either of beauty or magnificence. Each of the Four Elements having a particular region allotted to it, had a place of reſt, to which it naturally tended, by its motion, either up or down, in a ſtraight line, and where, when it had arrived, it naturally ceaſed to move. Earth deſcended, till it arrived at the place of Earth; Water, till it arrived at that of Water; and Air, till it arrived at that of Air; and there each of them tended to a ſtate of eternal repoſe and inaction. The Spheres conſiſted of a Fifth Element, which was neither light nor heavy, and whoſe natural motion made it tend, neither to the center, nor from the center, but revolve round it in a circle. As, by this motion,

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they could never change their ſituation with regard to the center, they had no place of repoſe, no place to which they naturally tended more than to any other, but revolved round and round for ever. This Fifth Element was ſubject neither to generation nor corruption, nor alteration of any kind; for whatever changes may happen in the Heavens, the ſenſes can ſcarce perceive them, and their appearance is the ſame in one age as in another. The beauty, too, of their ſuppoſed cryſtalline ſpheres ſeemed ſtill more to entitle them to this diſtinction of unchangeable immortality. It was the motion of thoſe Spheres, which occaſioned the mixtures of the Elements, and from thence, the production of all the forms and ſpecies, that diverſify the world. It was the approach of the Sun and of the other Planets, to the different parts of the Earth, which, by forcing down the element of Fire, occaſioned the generation of thoſe forms. It was the receſs of thoſe bodies, which, by allowing each Element to eſcape to its proper ſphere, brought about, in an equal time, their corruption. It was the periods of thoſe great lights of Heaven, which meaſured out to all ſublunary things, the term of their duration, of their growth, and their decay, either in one, or in a number of ſeaſons, according as the Elements of which they were compoſed,

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were either imperfectly or accurately blended and mixed with one another. Immortality, they could beſtow upon no individual form, becauſe the principles out of which it was formed, all tending to diſengage themſelves, and to return to their proper ſpheres, neceſſarily, at laſt, brought about its diſſolution. But, though all individuals were thus periſhable, and conſtantly decaying, every ſpecies was immortal, becauſe the ſubject-matter out of which they were made, and the revolution of the Heavens, the cauſe of their ſucceſſive generations, were always the ſame.

In the firſt ages of the world, the ſeeming incoherence of the appearances of nature, ſo confounded mankind, that they deſpaired of diſcovering in her operations any regular ſyſtem. Their ignorance, and confuſion of thought, neceſſarily gave birth to that puſillanimous ſuperſtition, which aſcribes almoſt every unexpected event, to the arbitrary will of ſome deſigning, though inviſible beings, who produced it for ſome private and particular purpoſe. The idea of an univerſal mind, of a God of all, who originally formed the whole, and who governs the whole by general laws, directed to the conſervation and proſperity of the whole, without regard to that of any private individual, was a notion to which they were utterly ſtrangers. Their gods, though they were apprehended to interpoſe,

terpoſe, upon ſome particular occaſions, were ſo far from being regarded, as the creators of the world, that their origin was apprehended to be poſterior to that of the world. The Earth, according to Heſiod, was the firſt production of the chaos. The Heavens aroſe out of the Earth, and from both together, all the gods, who afterwards inhabited them. Nor was this notion confined to the vulgar, and to thoſe poets who ſeem to have recorded the vulgar theology. Of all the philoſophers of the Ionian ſchool, Anaxagoras, it is well known, was the firſt who ſuppoſed that mind and underſtanding were requiſite to account for the firſt origin of the world, and who, therefore, compared with the other philoſophers of his time, talked, as Ariſtotle obſerves, like a ſober man among drunkards; but whoſe opinion was, at that time, ſo remarkable, that he ſeems to have got a ſirname from it. The ſame notion, of the ſpontaneous origin of the world, was embraced, too, as the ſame author tells us, by the early Pythagoreans, a ſect, which, in the antient world, was never regarded as irreligious. Mind, and underſtanding, and conſequently Deity, being the moſt perfect, were neceſſarily, according to them, the laſt productions of Nature. For in all other things, what was moſt perfect, they obſerved, always came laſt. As in plants and animals, it is not the

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ſeed that is moſt perfect, but the complete animal, with all its members, in the one; and the complete plant, with all its branches, leaves, flowers, and fruits, in the other. This notion, which could take place only while Nature was ſtill conſidered as, in ſome meaſure, diſorderly and inconſtant in her operations, was neceſſarily renounced by thoſe philoſophers, when, upon a more attentive ſurvey, they diſcovered, or imagined they had diſcovered, more diſtinctly, the chain which bound all her different parts to one another. As ſoon as the Univerſe was regarded as a complete machine, as a coherent ſyſtem, governed by general laws, and directed to general ends, viz. its own preſervation and proſperity, and that of all the ſpecies that are in it; the reſemblance which it evidently bore to thoſe machines which are produced by human art, neceſſarily impreſſed thoſe ſages with a belief, that in the original formation of the world there muſt have been employed an art reſembling the human art, but as much ſuperior to it, as the world is ſuperior to the machines which that art produces. The unity of the ſyſtem, which, according to this ancient philoſophy, is moſt perfect, ſuggeſted the idea of the unity of that principle, by [illegible]ſe art it was formed; and thus, as [illegible]ce begot ſuperſtition, ſcience gave [illegible] e firſt theiſm that aroſe among

among thoſe nations, who were not enlightened by divine Revelation. According to Timæus, who was followed by Plato, that intelligent Being, who formed the world, endowed it with a principle of life and underſtanding, which extends from its centre to its remoteſt circumference, which is conſcious of all its changes, and which governs and directs all its motions to the great end of its formation. This Soul of the world was itſelf a God, the greateſt of all the inferior, and created deities; of an eſſence that was indiſſoluble, by any power but by that of him who made it, and which was united to the body of the world, ſo as to be inſeparable by every force, but his who joined them, from the exertion of which his goodneſs ſecured them. The beauty of the celeſtial ſpheres attracting the admiration of mankind, the conſtancy and regularity of their motions ſeeming to manifeſt peculiar wiſdom and underſtanding, they were each of them ſuppoſed to be animated by an Intelligence of a nature that was, in the ſame manner, indiſſoluble and immortal, and inſeparably united to that ſphere which it inhabited. All the mortal and changeable beings which people the ſurface of the earth were formed by thoſe inferior deities; for the revolutions of the heavenly bodies ſeemed plainly to influence the generation and growth of both plants and animals, whoſe frail and fading forms bore the too evident marks of

the weakneſs of thoſe inferior cauſes, which joined their different parts to one another. According to Plato and Timæus, neither the Univerſe, nor even thoſe inferior deities, who govern the Univerſe, were eternal, but were formed in time, by the great Author of all things, out of that matter which had exiſted from all eternity. This at leaſt their words ſeem to import, and thus they are underſtood by Cicero, and by all the other writers of earlier antiquity, though ſome of the later Platoniſts have interpreted them differently.

According to Ariſtotle, who ſeems to have followed the doctrine of Ocellus, the world was eternal; the eternal effect of an eternal cauſe. He found it difficult, it would ſeem, to conceive what could hinder the Firſt Cauſe from exerting his divine energy from all eternity. At whatever time he began to exert it, he muſt have been at reſt during all the infinite ages of that eternity which had paſſed before it. To what obſtruction, from within or from without, could this be owing? or how could this obſtruction, if it ever had ſubſiſted, have ever been removed? His idea of the nature and manner of exiſtence of this Firſt Cauſe, as it is expreſſed in the laſt book of his Phyſics, and the five laſt chapters of his Metaphyſics, is indeed obſcure and unintelligible in the higheſt degree, and has perplexed his commentators more than any other

other parts of his writings. Thus far, however, he ſeems to expreſs himſelf plainly enough: that the Firſt Heavens, that of the Fixed Stars, from which are derived the motions of all the reſt, is revolved by an eternal, immoveable, unchangeable, unextended being, whoſe eſſence conſiſts in intelligence, as that of a body conſiſts in ſolidity and extenſion; and which is therefore neceſſarily and always intelligent, as a body is neceſſarily and always extended: that this Being was the firſt and ſupreme mover of the Univerſe: that the inferior Planetary Spheres derived each of them its peculiar revolution from an inferior being of the ſame kind; eternal, immoveable, unextended, and neceſſarily intelligent: that the ſole object of the intelligences of thoſe beings was their own eſſence, and the revolution of their own ſpheres; all other inferior things being unworthy of their conſideration; and that therefore whatever was below the Moon was abandoned by the gods to the direction of Nature, and Chance, and Neceſſity. For though thoſe celeſtial beings were, by the revolutions of their ſeveral Spheres, the original cauſes of the generation and corruption of all ſublunary forms, they were cauſes who neither knew nor intended the effects which they produced. This renowned philoſopher ſeems, in his theological notions,

to have been directed by prejudices which, though extremely natural, are not very philoſophical. The revolutions of the Heavens, by their grandeur and conſtancy, excited his admiration, and ſeemed, upon that account, to be effects not unworthy a Divine Intelligence. Whereas the meanneſs of many things, the diſorder and confuſion of all things below, exciting no ſuch agreeable emotion, ſeemed to have no marks of being directed by that Supreme Underſtanding. Yet, though this opinion ſaps the foundations of human worſhip, and muſt have the ſame effects upon ſociety as Atheiſm itſelf, one may eaſily trace, in the Metaphyſics upon which it is grounded, the origin of many of the notions, or rather of many of the expreſſions, in the ſcholaſtic theology, to which no notions can be annexed.

The Stoics, the moſt religious of all the ancient ſects of philoſophers, ſeem in this, as in moſt other things, to have altered and refined upon the doctrine of Plato. The order, harmony, and coherence which this philoſophy beſtowed upon the Univerſal Syſtem, ſtruck them with awe and veneration. As, in the rude ages of the world, whatever particular part of Nature excited the admiration of mankind, was apprehended to be animated by ſome particular divinity; ſo the whole of Nature having, by their reaſonings, become

become equally the object of admiration, was equally apprehended to be animated by a Univerſal Deity, to be itſelf a Divinity, an Animal; a term which to our ears ſeems by no means ſynonimous with the foregoing; whoſe body was the ſolid and ſenſible parts of Nature, and whoſe ſoul was that ætherial Fire, which penetrated and actuated the whole. For of all the four elements, out of which all things were compoſed, Fire or Æther ſeemed to be that which bore the greateſt reſemblance to the Vital Principle which informs both plants and animals, and therefore moſt likely to be the Vital Principle which animated the Univerſe. This infinite and unbounded Æther, which extended itſelf from the centre beyond the remoteſt circumference of Nature, and was endowed with the moſt conſummate reaſon and intelligence, or rather was itſelf the very eſſence of reaſon and intelligence, had originally formed the world, and had communicated a portion, or ray, of its own eſſence to whatever was endowed with life and ſenſation, which, upon the diſſolution of thoſe forms, either immediately or ſometime after, was again abſorbed into that ocean of Deity from whence it had originally been detached. In this ſyſtem the Sun, the Moon, the Planets, and the Fixed Stars, were each of them alſo inferior divinities, animated by a detached

portion of that ætherial eſſence which was the ſoul of the world. In the ſyſtem of Plato, the Intelligence which animated the world was different from that which originally formed it. Neither were theſe which animated the celeſtial ſpheres, nor thoſe which informed inferior terreſtrial animals, regarded as portions of this plaſtic ſoul of the world. Upon the diſſolution of animals, therefore, their ſouls were not abſorbed in the ſoul of the world, but had a ſeparate and eternal exiſtence, which gave birth to the notion of the tranſmigration of ſouls. Neither did it ſeem unnatural, that, as the ſame matter which had compoſed one animal body might be employed to compoſe another, that the ſame intelligence which had animated one ſuch being ſhould again animate another. But in the ſyſtem of the Stoics, the intelligence which originally formed, and that which animated the world, were one and the ſame, all inferior intelligences were detached portions of the great one; and therefore, in a longer, or in a ſhorter time, were all of them, even the goods themſelves, who animated the celeſtial bodies, to be at laſt reſolved into the infinite eſſence of this almighty Jupiter, who, at a deſtined period, ſhould, by an univerſal conflagration, wrap up all things, in that ætherial and fiery nature, out of which they had originally been deduced, again to bring

bring forth a new Heaven and a new Earth, new animals, new men, new deities; all of which would again, at a fated time, be ſwallowed up in a like conflagration, again to be re-produced, and again to be re-deſtroyed, and ſo on without end. * * * *

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ILLUSTRATED BY THE HISTORY OF THE

ANCIENT LOGICS AND METAPHYSICS.

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ANCIENT LOGICS AND METAPHYSICS.

IN every tranſmutation, either of one element into another, or of one compound body, either into the elements out of which it was compoſed, or into another compound body, it ſeemed evident, that, both in the old and in the new ſpecies, there was ſomething that was the ſame, and ſomething that was different. When Fire was changed into Air, or Water into Earth, the Stuff, or Subject-matter of this Air and this Earth, was evidently the ſame with that of the former Fire or Water; but the Nature or Species of thoſe new bodies was entirely different. When, in the ſame manner, a number of freſh, green, and odoriferous flowers were thrown together in a heap, they, in a ſhort time, entirely changed their nature, became putrid and loathſome, and diſſolved into a confuſed maſs of ordure, which bore no

no reſemblance, either in its ſenſible qualities or in its effects, to their former beautiful appearance. But how different ſoever the ſpecies, the ſubject-matter of the flowers, and of the ordure, was, in this caſe too, evidently the ſame. In every body, therefore, whether ſimple or mixed, there were evidently two principles, whoſe combination conſtituted the whole nature of that particular body. The firſt was the Stuff, or Subject-matter, out of which it was made; the ſecond was the Species, the Specific Eſſence, the Eſſential, or, as the ſchoolmen have called it, the Subſtantial Form of the Body. The firſt ſeemed to be the ſame in all bodies, and to have neither qualities nor powers of any kind, but to be altogether inert and imperceptible by any of the ſenſes, till it was qualified and rendered ſenſible by its union with ſome ſpecies or eſſential form. All the qualities and powers of bodies ſeemed to depend upon their ſpecies or eſſential forms. It was not the ſtuff or matter of Fire, or Air, or Earth, or Water, which enabled thoſe elements to produce their ſeveral effects, but that eſſential form which was peculiar to each of them. For it ſeemed evident that Fire muſt produce the effects of Fire, by that which rendered it Fire; Air, by that which rendered it Air; and that in the ſame manner all other ſimple and mixed bodies muſt produce their ſeveral effects,

effects, by that which conſtituted them ſuch or ſuch bodies; that is, by their ſpecific Eſſence or eſſential forms. But it is from the effects of bodies upon one another, that all the changes and revolutions in the material world ariſe. Since theſe, therefore, depend upon the ſpecific eſſences of thoſe bodies, it muſt be the buſineſs of philoſophy, that ſcience which endeavours to connect together all the different changes that occur in the world, to determine wherein the ſpecific Eſſence of each object conſiſts, in order to foreſee what changes or revolutions may be expected from it. But the ſpecific Eſſence of each individual object is not that which is peculiar to it as an individual, but that which is common to it, with all other objects of the ſame kind. Thus the ſpecific Eſſence of the Water, which now ſtands before me, does not conſiſt in its being heated by the Fire, or cooled by the Air, in ſuch a particular degree; in its being contained in a veſſel of ſuch a form, or of ſuch dimenſions. Theſe are all accidental circumſtances, which are altogether extraneous to its general nature, and upon which none of its effects as Water depend. Philoſophy, therefore, in conſidering the general nature of Water, takes no notice of thoſe particularities which are peculiar to this Water, but confines itſelf to thoſe things which are common to all water. If, in the progreſs of its enquiries,

enquiries, it ſhould deſcend to conſider the nature of Water that is modified by ſuch particular accidents, it ſtill would not confine its conſideration to this water contained in this veſſel, and thus heated at this fire, but would extend its views to Water in general contained in ſuch kind of veſſels, and heated to ſuch a degree at ſuch a fire. In every caſe, therefore, Species, or Univerſals, and not Individuals, are the objects of Philoſophy. Becauſe whatever effects are produced by individuals, whatever changes can flow from them, muſt all proceed from ſome univerſal nature that is contained in them. As it was the buſineſs of Phyſics, or Natural Philoſophy, to determine wherein conſiſted the Nature and Eſſence of every particular Species of things, in order to connect together all the different events that occur in the material world; ſo there were two other ſciences, which, though they had originally ariſen out of that ſyſtem of Natural Philoſophy I have juſt been deſcribing, were, however, apprehended to go before it, in the order in which the knowledge of Nature ought to be communicated. The firſt of theſe, Metaphyſics, conſidered the general nature of Univerſals, and the different ſorts or ſpecies into which they might be divided. The ſecond of theſe, Logics, was built upon this doctrine of Metaphyſics; and from the general nature of

Univerſals, and of the ſorts into which they were divided, endeavoured to aſcertain the general rules by which we might diſtribute all particular objects into general claſſes, and determine to what claſs each individual object belonged; for in this, they juſtly enough apprehended, conſiſted the whole art of philoſophical reaſoning. As the firſt of theſe two ſciences, Metaphyſics, is altogether ſubordinate to the ſecond, Logic, they ſeem, before the time of Ariſtotle, to have been regarded as one, and to have made up between them that ancient Dialectic of which we hear ſo much, and of which we underſtand ſo little: neither does this ſeparation ſeem to have been much attended to, either by his own followers, the ancient Peripatetics, or by any other of the old ſects of philoſophers. The later ſchoolmen, indeed, have diſtinguiſhed between Ontology and Logic; but their Ontology contains but a ſmall part of what is the ſubject of the metaphyſical books of Ariſtotle, the greater part of which, the doctrines of Univerſals, and every thing that is preparatory to the arts of defining and dividing, has, ſince the days of Porphery, been inſerted into their Logic.

According to Plato and Timæus, the principles out of which the Deity formed the World, and which were themſelves eternal, were three in number. The Subject-matter of

of things, the Species or ſpecific Eſſences of things, and what was made out of theſe, the ſenſible objects themſelves. Theſe laſt had no proper or durable exiſtence, but were in perpetual flux and ſucceſſion. For as Heraclitus had ſaid, that no man ever paſſed the ſame river twice, becauſe the water which he had paſſed over once was gone before he could paſs over it a ſecond time; ſo, in the ſame manner, no man ever ſaw, or heard, or touched the ſame ſenſible object twice. When I look at the window, for example, the viſible ſpecies, which ſtrikes my eyes this moment, though reſembling, is different from that which ſtruck my eyes the immediately preceding moment. When I ring the bell, the ſound, or audible ſpecies which I hear this moment, though reſembling in the ſame manner, is different, however from that which I heard the moment before. When I lay my hand on the table, the tangible ſpecies which I feel this moment, though reſembling, in the ſame manner, is numerically different too from that which I felt the moment before. Our ſenſations, therefore, never properly exiſt or endure one moment; but, in the very inſtant of their generation, periſh and are annihilated for ever. Nor are the cauſes of thoſe ſenſations more permanent. No corporeal ſubſtance is ever exactly the ſame, either in whole or in any aſſignable part, during two

moments, but by the perpetual addition of new parts, as well as loſs of old ones, is in continual flux and ſucceſſion. Things of ſo fleeting a nature can never be the objects of ſcience, or of any ſteady or permanent judgment. While we look at them, in order to conſider them, they are changed and gone, and annihilated for ever. The objects of ſcience, and of all the ſteady judgments of the underſtanding, muſt be permanent, unchange able, always exiſtent, and liable neither to generation nor corruption, nor alteration of any kind. Such are the ſpecies or ſpecific eſſences of things. Man is perpetually changing every particle of his body; and every thought of his mind is in continual flux and ſucceſſion. But humanity, or human nature, is always exiſtent, is always the ſame, is never generated, and is never corrupted. This, therefore, is the object of ſcience, reaſon, and underſtanding, as man is the object of ſenſe, and of thoſe inconſtant opinions which are founded upon ſenſe. As the objects of ſenſe were apprehended to have an external exiſtence, independent of the act of ſenſation, ſo theſe objects of the underſtanding were much more ſuppoſed to have an external exiſtence independent of the act of underſtanding. Thoſe external eſſences were, according to Plato, the exemplars, according to which the Deity formed the world, and all the ſenſible

objects that are in it. The Deity comprehended within his infinite essence, all these species, or eternal exemplars, in the same manner as he comprehended all sensible objects.

Plato, however, seems to have regarded the first of those as equally distinct with the second from what we would now call the Ideas or Thoughts of the Divine Mind *, and even

* He calls them, indeed, Ideas, a word which, in him, in Aristotle, and all the other writers of earlier antiquity, signifies a Species, and is perfectly synonimous with that other word Εἶδος, more frequently made use of by Aristotle. As, by some of the later sects of philosophers, particularly by the Stoics, all species, or specific essences, were regarded as mere creatures of the mind, formed by abstraction, which had no real existence external to the thoughts that conceived them, the word Idea came, by degrees, to its present signification, to mean, first, an abstract thought or conception; and afterwards, a thought or conception of any kind; and thus became synonymous with that other Greek word, Ἔννοια, from which it had originally a very different meaning. When the later Platonists, who lived at a time when the notion of the separate existence of specific essences was universally exploded, began to comment upon the writings of Plato, and upon that strange fancy that, in his writings, there was a double doctrine; and that they were intended to seem to mean one thing, while at bottom they meant a very different, which the writings of no man in his senses ever were, or ever could be intended to do; they represented his doctrine as meaning no more, than that the Deity formed the world after what we would now call an Idea, or plan conceived in his own mind, in the same manner as any other artist. But, if Plato had meant to express no more than this most natural and simple of all notions, he might surely have expressed it more plainly, and would hardly, one would think, have talked of it with so much emphasis, as of something which it required the utmost reach of thought to comprehend. According to this representation, Plato's notion of Species, or Universals, was the same with that of Aristotle. Aristotle, however, does not seem to understand it as such; he bestows a great part of his Metaphysics

even to have ſuppoſed, that they had a particular place of exiſtence, beyond the ſphere of the

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Metaphyſics upon confuting it, and oppoſes it in all his other works; nor does he, in any one of them, give the leaſt hint, or inſinuation, as if it could be ſuſpected that, by the Ideas of Plato, was meant the thoughts or conceptions of the Divine Mind. Is it poſſible that he, who was twenty years in his ſchool, ſhould, during all that time, have miſunderſtood him, eſpecially when his meaning was ſo very plain and obvious? Neither is this notion of the ſeparate exiſtence of Species, diſtinct both from the mind which conceives them, and from the ſenſible objects which are made to reſemble them, one of thoſe doctrines which Plato would but ſeldom have occaſion to talk of. However it may be interpreted, it is the very baſis of his philoſophy; neither is there a ſingle dialogue in all his works which does not refer to it. Shall we ſuppoſe, that that great philoſopher, who appears to have been ſo much ſuperior to his maſter in every thing but eloquence, wilfully, and upon all occaſions, miſrepreſented, not one of the deep and myſterious doctrines of the philoſophy of Plato, but the firſt and moſt fundamental principle of all his reaſonings; when the writings of Plato were in the hands of every body; when his followers and diſciples were ſpread all over Greece; when almoſt every Athenian of diſtinction, that was nearly of the ſame age with Ariſtotle, muſt have been bred in his ſchool; when Speuſippus, the nephew and ſucceſſor of Plato, as well as Xenocrates, who continued the ſchool in the Academy, at the ſame time that Ariſtotle held his in the Lyceum, muſt have been ready, at all times, to expoſe and affront him for ſuch groſs diſingenuity. Does not Cicero, does not Seneca underſtand this doctrine in the ſame manner as Ariſtotle has repreſented it? Is there any author in all antiquity who ſeems to underſtand it otherwiſe, earlier than Plutarch, an author who ſeems to have been as bad a critic in philoſophy as in hiſtory, and to have taken every thing at ſecond-hand in both, and who lived after the origin of that eclectic philoſophy, from whence the later Platoniſts aroſe, and who ſeems himſelf to have been one of that ſect? Is there any one paſſage in any Greek author, near the time of Ariſtotle and Plato, in which the word Idea is uſed in its preſent meaning, to ſignify a thought or conception? Are not the words, which in all languages expreſs reality or exiſtence, directly oppoſed to thoſe which expreſs thought, or conception only? Or, is there any other difference betwixt a thing that exiſts, and a thing that does not exiſt, except

the visible corporeal world; though this has been much controverted, both by the later Platonists,

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this, that the one is a mere conception, and that the other is something more than a conception? With what propriety, therefore, could Plato talk of those eternal species, as of the only things which had any real existence, if they were no more than the conceptions of the Divine Mind? Had not the Deity, according to Plato, as well as according to the Stoics, from all eternity, the idea of every individual, as well as of every species, and of the state in which every individual was to be, in each different instance of its existence? Were not all the divine ideas, therefore, of each individual, or of all the different states, which each individual was to be in during the course of its existence, equally eternal and unalterable with those of the species? With what sense, therefore, could Plato say, that the first were eternal, because the Deity had conceived them from all eternity, since he had conceived the others from all eternity too, and since his ideas of the Species could, in this respect, have no advantage of those of the individual? Does not Plato, in many different places, talk of the Ideas of Species or Universals as innate, and having been impressed upon the mind in its state of pre-existence, when it had an opportunity of viewing these Species as they are in themselves, and not as they are expressed in their copies, or representative upon earth? But if the only place of the existence of those Species was the Divine Mind, will not this suppose, that Plato either imagined, like Father Malbranche, that in its state of pre-existence, the mind saw all things in God: or that it was itself an emanation of the Divinity? That he maintained the first opinion, will not be pretended by any body who is at all versed in the history of science. That enthusiastic notion, though it may seem to be favoured by some passages in the Fathers, was never, it is well known, coolly and literally maintained by any body before that Cartesian philosopher. That the human mind was itself an emanation of the Divine, though it was the doctrine of the Stoics, was by no means that of Plato; though, upon the notion of a pretended double doctrine, the contrary has lately been asserted. According to Plato, the Deity formed the soul of the world out of that substance which is always the same, that is, out of Species or Universals; out of that which is always different, that is, out of corporeal substances; and out of a substance that was of a middle nature between these, which it is not easy to understand what

Platonifts, and by fome very judicious modern critics, who have followed the interpretation of the later Platonifts, as what did moft honour to the judgment of that renowned philofopher. All the objects in this world, continued he, are particular and individual. Here, therefore, the human mind has no opportunity of feeing any Species, or Univerfal Nature. Whatever ideas it has, therefore, of fuch beings, for it plainly has them, it muft derive from the memory of what it has feen, in fome former period of its exiftence, when it had an opportunity of vifiting the place or Sphere of Univerfals. For fome time after it is immerfed in the body, during its infancy, its childhood, and a great part of its youth, the violence of thofe paffions which it derives from the body, and which are all directed to the particular and individual objects of this world, hinder it from turning its attention to thofe Univerfal Natures, with which it had been converfant in the world from whence it came. The Ideas, of thefe, therefore, feem,

what he meant by. Out of a part of the fame compofition, he made thofe inferior intelligences who animated the celeftial fpheres, to whom he delivered the remaining part of it, to form from thence the fouls of men and animals. The fouls of thofe inferior deities, though made out of a fimilar fubftance or compofition, were not regarded as parts, or emanations of that of the world; nor were thofe of animals, in the fame manner, regarded as parts or emanations of thofe inferior deities; much lefs were any of them regarded as parts, or emanations of the great Author of all things.

in this first period of its existence here, to be overwhelmed in the confusion of those turbulent emotions, and to be almost entirely wiped out of its remembrance. During the continuance of this state, it is incapable of Reasoning, Science and Philosophy, which are conversant about Universals. Its whole attention is turned towards particular objects, concerning which, being directed by no general notions, it forms many vain and false opinions, and is filled with error, perplexity, and confusion. But, when age has abated the violence of its passions, and composed the confusion of its thoughts, it then becomes more capable of reflection, and of turning its attention to those almost forgotten ideas of things with which it had been conversant in the former state of its existence. All the particular objects in this sensible world, being formed after the eternal exemplars in that intellectual world, awaken, upon account of their resemblance, insensibly, and by slow degrees, the almost obliterated ideas of these last. The beauty, which is shared in different degrees among terrestrial objects, revives the same idea of that Universal Nature of beauty which exists in the intellectual world: particular acts of justice, of the universal nature of justice; particular reasonings, and particular sciences, of the universal nature of science, and reasoning; particular roundnesses, of the univeral nature of roundness; particular squares, of the universal

verſal nature of ſquareneſs. Thus ſcience, which is converſant about Univerſals, is derived from memory; and to inſtruct any perſon concerning the general nature of any ſubject, is no more than to awaken in him the remembrance of what he formerly knew about it. This both Plato and Socrates imagined they could ſtill further confirm, by the fallacious experiment, which ſhewed, that a perſon might be led to diſcover himſelf, without any information, any general truth, of which he was before ignorant, merely by being aſked a number of properly arranged and connected queſtions concerning it.

The more the ſoul was accuſtomed to the conſideration of thoſe Univerſal Natures, the leſs it was attached to any particular and individual objects; it approached the nearer to the original perfection of its nature, from which, according to this philoſophy, it had fallen. Philoſophy, which accuſtoms it to conſider the general Eſſence of things only, and to abſtract from all their particular and ſenſible circumſtances, was, upon this account, regarded as the great purifier of the ſoul. As death ſeparated the ſoul from the body, and from the bodily ſenſes and paſſions, it reſtored it to that intellectual world, from whence it had originally deſcended, where no ſenſible Species called off its attention from thoſe general Eſſences of things. Philoſophy, in

this life, habituating it to the ſame conſiderations, brings it, in ſome degree, to that ſtate of happineſs and perfection, to which death reſtores the ſouls of juſt men in a life to come.

Such was the doctrine of Plato concerning the Species or Specific Eſſence of things. This, at leaſt, is what his words ſeem to import, and thus he is underſtood by Ariſtotle, the moſt intelligent and the moſt renowned of all his diſciples. It is a doctrine, which, like many of the other doctrines of abſtract Philoſophy, is more coherent in the expreſſion than in the idea; and which ſeems to have ariſen, more from the nature of language, than from the nature of things. With all its imperfections it was excuſable, in the beginnings of philoſophy, and is not a great deal more remote from the truth, than many others which have ſince been ſubſtituted in its room by ſome of the greateſt pretenders to accuracy and preciſion. Mankind have had, at all times, a ſtrong propenſity to realize their own abſtractions, of which we ſhall immediately ſee an example, in the notions of that very philoſopher who firſt expoſed the ill-grounded foundation of thoſe Ideas, or Univerſals, of Plato and Timæus. To explain the nature, and to account for the origin of general Ideas, is, even at this day, the greateſt difficulty in abſtract philoſophy. How the human mind, when

when it reaſons concerning the general nature of triangles, ſhould either conceive, as Mr. Locke imagines it does, the idea of a triangle, which is neither obtuſangular, not rectangular, nor acutangular; but which was at once both none and of all thoſe together; or ſhould, as Malbranche thinks neceſſary for this purpoſe, comprehend at once, within its finite capacity, all poſſible triangles of all poſſible forms and dimenſions, which are infinite in number, is a queſtion, to which it is ſurely not eaſy to give a ſatisfactory anſwer. Malbranche, to ſolve it, had recourſe to the enthuſiaſtic and unintelligible notion of the intimate union of the human mind with the divine, in whoſe infinite eſſence the immenſity of ſuch ſpecies could alone be comprehended; and in which alone, therefore, all finite intelligences could have an opportunity of viewing them. If, after more than two thouſand years reaſoning about this ſubject, this ingenious and ſublime philoſopher was forced to have recourſe to ſo ſtrange a fancy, in order to explain it, can we wonder that Plato, in the very firſt dawnings of ſcience, ſhould, for the ſame purpoſe, adopt an hypotheſis, which has been thought, without much reaſon, indeed, to have ſome affinity to that of Malbranche, and which is not more out of the way?

What ſeems to have miſled thoſe early philoſophers, was, the notion, which appears, at

at firſt, natural enough, that thoſe things, out of which any object is compoſed, muſt exiſt antecedent to that object. But the things out of which all particular objects ſeem to be compoſed, are the ſtuff or matter of thoſe objects, and the form or ſpecific Eſſence, which determines them to be of this or that claſs of things. Theſe, therefore, it was thought, muſt have exiſted antecedent to the object which was made up between them. Plato, who held, that the ſenſible world, which, according to him, is the world of individuals, was made in time, neceſſarily conceived, that both the univerſal matter, the object of a ſpurious reaſon, and the ſpecific eſſence, the object of proper reaſon and philoſophy out of which it was compoſed, muſt have had a ſeparate exiſtence from all eternity. This intellectual world, very different from the intellectual world of Cudworth, though much of the language of the one has been borrowed from that of the other, was neceſſarily, and always exiſtent; whereas the ſenſible world owed its origin to the free will and bounty of its author.

A notion of this kind, as long as it is expreſſed in very general language; as long as it is not much reſted upon; nor attempted to be very particularly and diſtinctly explained, paſſes eaſily enough, through the indolent imagination, accuſtomed to ſubſtitute words in

in the room of ideas; and if the words ſeem to hang eaſily together, requiring no great preciſion in the ideas. It vaniſhes, indeed; is diſcovered to be altogether incomprehenſible, and eludes the graſp of the imagination, upon an attentive conſideration. It requires, however, an attentive conſideration; and if it had been as fortunate as many other opinions of the ſame kind, and about the ſame ſubject, it might, without examination, have continued to be the current philoſophy for a century or two. Ariſtotle, however, ſeems immediately to have diſcovered, that it was impoſſible to conceive, as actually exiſtent, either that general matter, which was not determined by any particular ſpecies, or thoſe ſpecies which were not embodied, if one may ſay ſo, in ſome particular portion of matter. Ariſtotle, too, held, as we have already obſerved, the eternity of the ſenſible world. Though he held, therefore, that all ſenſible objects were made up of two principles, both of which, he calls, equally, ſubſtances, the matter and the ſpecific eſſence, he was not obliged to hold, like Plato, that thoſe principles exiſted prior in the order of time to the objects which they afterwards compoſed. They were prior, he ſaid, in nature, but not in time, according to a diſtinction which was of uſe to him upon ſome other occaſions. He diſtinguiſhed, too, betwixt actual and potential

potential exiſtence. By the firſt, he ſeems to have underſtood, what is commonly meant, by exiſtence or reality; by the ſecond, the bare poſſibility of exiſtence. His meaning, I ſay, ſeems to amount to this; though he does not explain it preciſely in this manner. Neither the material Eſſence of body could, according to him, exiſt actually without being determined by ſome ſpecific Eſſence, to ſome particular claſs of things, nor any ſpecific Eſſence without being embodied in ſome particular portion of matter. Each of theſe two principles, however, could exiſt potentially in this ſeparate ſtate. That matter exiſted potentially, which, being endowed with a particular form, could be brought into actual exiſtence; and that form, which, by being embodied in a particular portion of matter, could, in the ſame manner, be called forth into the claſs of complete realities. This potential exiſtence of matter and form, he ſometimes talks of, in expreſſions which very much reſemble thoſe of Plato, to whoſe notion of ſeparate Eſſence it bears a very great affinity.

Ariſtotle, who ſeems in many things original, and who endeavoured to ſeem to be ſo in all things, added the principle of privation to thoſe of matter and form, which he had derived from the ancient Pythagorean ſchool. When Water is changed into Air, the tranſmutation

mutation is brought about by the material principle of thoſe two elements being deprived of the form of Water, and then aſſuming the form of Air. Privation, therefore, was a third principle oppoſite to form, which entered into the generation of every Species, which was always from ſome other Species. It was a principle of generation, but not of compoſition, as is obvious.

The Stoics, whoſe opinions were, in all the different parts of philoſophy, either the ſame with, or very nearly allied to thoſe of Ariſtotle and Plato, though often diſguiſed in very different language, held, that all things, even the elements themſelves, were compounded of two principles, upon one of which depended all the active; and upon the other, all the paſſive powers of theſe bodies. The laſt of theſe, they called the Matter; the firſt, the Cauſe, by which they meant the very ſame thing which Ariſtotle and Plato underſtood, by their ſpecific Eſſences. Matter, according to the Stoics, could have no exiſtence ſeparate from the cauſe or efficient principle which determined it to ſome particular claſs of things. Neither could the efficient principle exiſt ſeparately from the material, in which it was always neceſſarily embodied. Their opinion, therefore, ſo far coincided with that of the old Peripatetics. The efficient principle, they ſaid, was the Deity. By which they meant,

that it was a detached portion of the etherial and divine nature, which penetrated all things, that conſtituted what Plato would have called the ſpecific Eſſence of each individual object; and ſo far their opinion coincides pretty nearly with that of the latter Platoniſts, who held, that the ſpecific Eſſences of all things were detached portions of their created deity, the ſoul of the world; and with that of ſome of the Arabian and Scholaſtic Commentators of Ariſtotle, who held that the ſubſtantial forms of all things deſcended from thoſe Divines Eſſences which animated the Celeſtial Spheres. Such was the doctrine of the four principal Sects of the ancient Philoſophers, concerning the ſpecific Eſſences of things, of the old Pythagoreans, of the Academical, Peripatetic, and Stoical Sects.

As this doctrine of ſpecific Eſſences ſeems naturally enough to have ariſen from that ancient ſyſtem of Phyſics, which I have above deſcribed, and which is, by no means, devoid of probability, ſo many of the doctrines of that ſyſtem, which ſeem to us, who have been long accuſtomed to another, the moſt incomprehenſible, neceſſarily flow from this metaphyſical notion. Such are thoſe of generation, corruption, and alteration; of mixture, condenſation, and rarefaction. A body was generated or corrupted, when it changed its ſpecific Eſſence, and paſſed from one deno-

mination to another. It was altered when it changed only ſome of its qualities, but ſtill retained the ſame ſpecific Eſſence, and the ſame denomination. Thus, when a flower was withered, it was not corrupted; though ſome of its qualities were changed, it ſtill retained the ſpecific Eſſence, and therefore juſtly paſſed under the denomination of a flower. But, when, in the further progreſs of its decay, it crumbled into earth, it was corrupted; it loſt the ſpecific Eſſence, or ſubſtantial form of the flower, and aſſumed that of the earth, and therefore juſtly changed its denomination.

The ſpecific Eſſence, or univerſal nature that was lodged in each particular claſs of bodies, was not itſelf the object of any of our ſenſes, but could be perceived only by the underſtanding. It was by the ſenſible qualities, however, that we judged of the ſpecific Eſſence of each object. Some of theſe ſenſible qualities, therefore, we regarded as eſſential, or ſuch as ſhowed, by their preſence or abſence, the preſence or abſence of that eſſential form from which they neceſſarily flowed: Others were accidental, or ſuch whoſe preſence or abſence had no ſuch neceſſary conſequences. The firſt of theſe two ſorts of qualities was called Properties; the ſecond, Accidents.

In

In the Specific Eſſence of each object itſelf, they diſtinguiſhnd two parts; one of which was peculiar and characteriſtical of the claſs of things of which that particular object was an individual, the other was common to it with ſome other higher claſſes of things. Theſe two parts were, to the Specific Eſſence, pretty much what the Matter and the Specific Eſſence were to each individual body. The one, which was called the Genus, was modified and determined by the other, which was called the Specific Difference, pretty much in the ſame manner as the univerſal matter contained in each body was modified and determined by the Specific Eſſence of that particular claſs of bodies. Theſe four, with the Specific Eſſence or Species itſelf, made up the number of the Five Univerſals, ſo well known in the ſchools by the names of Genus, Species, Differentia, Proprium, and Accidens.

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OF THE

NATURE OF THAT IMITATION

WHICH TAKES PLACE IN WHAT ARE CALLED

THE IMITATIVE ARTS.

VOL. V.

OF THE

IMITATIVE ARTS.

PART I.

THE moſt perfect imitation of an object of any kind muſt in all caſes, it is evident, be another object of the ſame kind, made as exactly as poſſible after the ſame model. What, for example, would be the moſt perfect imitation of the carpet which now lies before me?—Another carpet, certainly, wrought as exactly as poſſible after the ſame pattern. But, whatever might be the merit or beauty of this ſecond carpet, it would not be ſuppoſed to derive any from the circumſtance of its having been made in imitation of the firſt. This circumſtance of its being not an original, but a copy, would even be conſidered as ſome diminution of that merit; a greater or ſmaller, in proportion as the object was of a nature to lay claim to a greater or ſmaller degree of admiration. It would not much diminiſh the merit of a common carpet, becauſe in ſuch trifling objects, which at beſt can lay claim to ſo little

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PART I. beauty or merit of any kind, we do not always think it worth while to affect originality: it would diminish a good deal that of a carpet of very exquisite workmanship. In objects of still greater importance, this exact, or, as it would be called, this servile imitation, would be considered as the most unpardonable blemish. To build another St. Peter's, or St. Paul's church, of exactly the same dimensions, proportions, and ornaments with the present buildings at Rome, or London, would be supposed to argue such a miserable barrenness of genius and invention as would disgrace the most expensive magnificence.

The exact resemblance of the correspondent parts of the same object is frequently considered as a beauty, and the want of it as a deformity; as in the correspondent members of the human body, in the opposite wings of the same building, in the opposite trees of the same alley, in the correspondent compartments of the same piece of carpet-work, or of the same flower-garden, in the chairs or tables which stand in the correspondent parts of the same room, &c. But in objects of the same kind, which in other respects are regarded as altogether separate and unconnected, this exact resemblance is seldom considered as a beauty, nor the want of it as a deformity. A man, and in the same manner a horse, is handsome or ugly, each of them, on account of his

his own intrinſic beauty or deformity, without any regard to their reſembling or not reſembling, the one, another man, or the other, another horſe. A ſet of coach-horſes, indeed, is ſuppoſed to be handſomer when they are all exactly matched; but each horſe is, in this caſe, conſidered not as a ſeparated and unconnected object, or as a whole by himſelf, but as a part of another whole, to the other parts of which he ought to bear a certain correſpondence: ſeparated from the ſet, he derives neither beauty from his reſemblance, nor deformity from his unlikeneſs to the other horſes which compoſe it.

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Even in the correſpondent parts of the ſame object, we frequently require no more than a reſemblance in the general outline. If the inferior members of thoſe correſpondent parts are too minute to be ſeen diſtinctly, without a ſeparate and diſtinct examination of each part by itſelf, as a ſeparate and unconnected object, we ſhould ſometimes even be diſpleaſed if the reſemblance was carried beyond this general outline. In the correſpondent parts of a room we frequently hang pictures of the ſame ſize; thoſe pictures, however, reſemble one another in nothing but the frame, or, perhaps, in the general character of the ſubject: If the one is a landſcape, the other is a landſcape too; if the one repreſents a religious or a bacchanalian ſubject, its companion repreſents another

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other of the ſame kind. Nobody ever thought of repeating the ſame picture in each correſpondent frame. The frame, and the general character of two or three pictures, is as much as the eye can comprehend at one view, or from one ſtation. Each picture, in order to be ſeen diſtinctly, and underſtood thoroughly, muſt be viewed from a particular ſtation, and examined by itſelf as a ſeparate and unconnected object. In a hall or portico, adorned with ſtatues, the nitches, or perhaps the pedeſtals, may exactly reſemble one another, but the ſtatues are always different. Even the maſks which are ſometimes carried upon the different key-ſtones of the ſame arcade, or of the correſpondent doors and windows of the ſame front, though they may all reſemble one another in the general outline, yet each of them has always its own peculiar features, and a grimace of its own. There are ſome Gothic buildings in which the correſpondent windows reſemble one another only in the general outline, and not in the ſmaller ornaments and ſubdiviſions. Theſe are different in each, and the architect had conſidered them as too minute to be ſeen diſtinctly, without a particular and ſeparate examination of each window by itſelf, as a ſepara a nd unconnected object. A variety of tl rt, owever, I think, is not agreeable. In ts which are ſuſceptible only of a1 ir r order of beauty, ſuch as

as the frames of pictures, the nitches or the pedestals of statues, &c. there seems frequently to be affectation in the study of variety, of which the merit is scarcely ever sufficient to compensate the want of that perspicuity and distinctness, of that easiness to be comprehended and remembered, which is the natural effect of exact uniformity. In a portico of the Corinthian or Ionic order, each column resembles every other, not only in the general outline, but in all the minutest ornaments; though some of them, in order to be seen distinctly, may require a separate and distinct examination in each column, and in the entablature of each intercolumnation. In the inlaid tables, which, according to the present fashion, are sometimes fixed in the correspondent parts of the same room, the pictures only are different in each. All the other more frivolous and fanciful ornaments are commonly, so far at least as I have observed the fashion, the same in them all. Those ornaments, however, in order to be seen distinctly, require a separate and distinct examination of each table.

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The extraordinary resemblance of two natural objects, of twins, for example, is regarded as a curious circumstance; which, though it does not increase, yet does not diminish the beauty of either, considered as a separate and unconnected object. But the exact resem-

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blance of two productions of art, ſeems to be always conſidered as ſome diminution of the merit of at leaſt one of them; as it ſeems to prove, that one of them, at leaſt, is a copy either of the other, or of ſome other original. One may ſay, even of the copy of a picture, that it derives its merit, not ſo much from its reſemblance to the original, as from its reſemblance to the object which the original was meant to reſemble. The owner of the copy, ſo far from ſetting any high value upon its reſemblance to the original, is often anxious to deſtroy any value or merit which it might derive from this circumſtance. He is often anxious to perſuade both himſelf and other people that it is not a copy, but an original, of which what paſſes for the original is only a copy. But, whatever merit a copy may derive from its reſemblance to the original, an original can certainly derive none from the reſemblance of its copy.

But though a production of art ſeldom derives any merit from its reſemblance to another object of the ſame kind, it frequently derives a great deal from its reſemblance to an object of a different kind, whether that object be a produ ion of art or of nature. A painted cloth, t rk of ſome laborious Dutch artiſt, ſo cu y ſhaded and coloured as to repreſent t pi and ſoftneſs of a woollen one, might e ſome merit from its reſem-

resemblance even to the sorry carpet which now lies before me. The copy might, and probably would, in this case, be of much greater value than the original. But if this carpet was represented as spread, either upon a floor or upon a table, and projecting from the back ground of the picture, with exact observation of perspective, and of light and shade, the merit of the imitation would be still greater.

In Painting, a plain surface of one kind is made to resemble, not only a plain surface of another, but all the three dimensions of a solid substance. In Statuary and Sculpture, a solid substance of one kind, is made to resemble a solid substance of another. The disparity between the object imitating, and the object imitated, is much greater in the one art than in the other; and the pleasure arising from the imitation seems to be greater in proportion as this disparity is greater.

In Painting, the imitation frequently pleases, though the original object be indifferent, or even offensive. In Statuary and Sculpture it is otherwise. The imitation seldom pleases, unless the original object be in a very high degree either great, or beautiful, or interesting. A butcher's-stall, or a kitchen-dresser, with the objects which they commonly present, are not certainly the happiest subjects, even for Painting. They have, however, been represented with so

 much

PART I. much care and ſucceſs by ſome Dutch maſters, that it is impoſſible to view the pictures without ſome degree of pleaſure. They would be moſt abſurd ſubjects for Statuary or Sculpture, which are, however, capable of repreſenting them. The picture of a very ugly or deformed man, ſuch as Æſop, or Scarron, might not make a diſagreeable piece of furniture. The ſtatue certainly would. Even a vulgar ordinary man or woman, engaged in a vulgar ordinary action, like what we ſee with ſo much pleaſure in the pictures of Rembrant, would be too mean a ſubject for Statuary. Jupiter, Hercules, and Apollo, Venus and Diana, the Nymphs and the Graces, Bacchus, Mercury, Antinous and Meleager, the miſerable death of Laocoon, the melancholy fate of the children of Niobe, the Wreſtlers, the fighting, the dying gladiator, the figures of gods and goddeſſes, of heroes and heroines, the moſt perfect forms of the human body, placed either in the nobleſt attitudes, or in the moſt intereſting ſituations which the human imagination is capable of conceiving, are the proper, and therefore have always been the favourite ſubjects of Statuary: that art cannot, without degrading itſelf, ſtoop to repreſent any thing that is offenſive, or mean, or even indifferent. Painting is not ſo diſdainful; and, though capable of repreſenting the nobleſt

noblest objects, it can, without forfeiting its title to please, submit to imitate those of a much more humble nature. The merit of the imitation alone, and without any merit in the imitated object, is capable of supporting the dignity of Painting: it cannot support that of Statuary. There would seem, therefore, to be more merit in the one species of imitation than in the other.

In Statuary, scarcely any drapery is agreeable. The best of the ancient statues were either altogether naked or almost naked; and those of which any considerable part of the body is covered, are represented as clothed in wet linen—a species of clothing which most certainly never was agreeable to the fashion of any country. This drapery too is drawn so tight, as to express beneath its narrow foldings the exact form and outline of any limb, and almost of every muscle of the body. The clothing which thus approached the nearest to no clothing at all, had, it seems, in the judgment of the great artists of antiquity, been that which was most suitable to Statuary. A great painter of the Roman school, who had formed his manner almost entirely upon the study of the ancient statues, imitated at first their drapery in his pictures; but he soon found that in Painting it had the air of meanness and poverty, as if the persons who wore it could scarce afford clothes enough

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T to cover them; and that larger folds, and a looſer and more flowing drapery, were more ſuitable to the nature of his art. In Painting, the imitation of ſo very inferior an object as a ſuit of clothes is capable of pleaſing; and, in order to give this object all the magnificence of which it is capable, it is neceſſary that the folds ſhould be large, looſe, and flowing. It is not neceſſary in Painting that the exact form and outline of every limb, and almoſt of every muſcle of the body, ſhould be expreſſed beneath the folds of the drapery; it is ſufficient if theſe are ſo diſpoſed as to indicate in general the ſituation and attitude of the principal limbs. Painting, by the mere force and merit of its imitation, can venture, without the hazard of diſpleaſing, to ſubſtitute, upon many occaſions, the inferior in the room of the ſuperior object, by making the one, in this manner, cover and entirely conceal a great part of the other. Statuary can ſeldom venture to do this, but with the utmoſt reſerve and caution; and the ſame drapery, which is noble and magnificent in the one art, appears clumſy and awkward in the other. Some modern artiſts, however, have attempted to introduce into Statuary the drapery which is peculiar to Painting. It may not, perhaps, upon every occaſion, be quite ſo ridiculous as the marble periwigs in Weſtminſter Abbey: but, if it does not always appear clumſy and awkward,

awkward, it is at beſt always inſipid and unintereſting.

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It is not the want of colouring which hinders many things from pleaſing in Statuary which pleaſe in Painting; it is the want of that degree of diſparity between the imitating and the imitated object, which is neceſſary, in order to render intereſting the imitation of an object which is itſelf not intereſting. Colouring, when added to Statuary, ſo far from increaſing, deſtroys almoſt entirely the pleaſure which we receive from the imitation; becauſe it takes away the great ſource of that pleaſure, the diſparity between the imitating and the imitated object. That one ſolid and coloured object ſhould exactly reſemble another ſolid and coloured object, ſeems to be a matter of no great wonder or admiration. A painted ſtatue, though it certainly may reſemble a human figure much more exactly than any ſtatue which is not painted, is generally acknowledged to be a diſagreeable, and even an offenſive object; and ſo far are we from being pleaſed with this ſuperior likeneſs, that we are never ſatisfied with it; and, after viewing it again and again, we always find that it is not equal to what we are diſpoſed to imagine it might have been: though it ſhould ſeem to want ſcarce any thing but the life, we could not pardon it for thus wanting what it is altogether impoſſible it ſhould have.

The

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tiful ſoever, are not ſufficiently intereſting; they have not dignity enough, if I may ſay ſo, to be proper ſubjects for a piece of Sculpture, which is to pleaſe alone, and not as the ornamental appendage of ſome other object.

In Tapeſtry and Needle-work, in the ſame manner as in Painting, a plain ſurface is ſometimes made to repreſent all the three dimenſions of a ſolid ſubſtance. But both the ſhuttle of the weaver, and the needle of the embroiderer, are inſtruments of imitation ſo much inferior to the pencil of the painter, that we are not ſurpriſed to find a proportionable inferiority in their productions. We have all more or leſs experience that they uſually are much inferior; and, in appreciating a piece of Tapeſtry or Needle-work, we never compare the imitation of either with that of a good picture, for it never could ſtand that compariſon, but with that of other pieces of Tapeſtry or Needle-work. We take into conſideration, not only the diſparity between the imitating and the imitated object, but the awkwardneſs of the inſtruments of imitation; and if it is as well as any thing that can be expected from theſe, if it is better than the greater part of what actually comes from them, we are often not only contented but highly pleaſed.

A good painter will often execute in a few days a ſubject which would employ the beſt tapeſtry-

flowers which ſometimes ornament the frize of that order. Such imitations, however, never deceive us; their reſemblance to the original objects is always much inferior to that of artificial fruits and flowers. Such as it is, however, we are contented with it; and, where there is ſuch diſparity between the imitating and the imitated objects, we find that it is as great as it can be, or as we expect that it ſhould be. Paint that foliage and thoſe flowers with the natural colours, and, inſtead of pleaſing more, they will pleaſe much leſs. The reſemblance, however, will be much greater; but the diſparity between the imitating and the imitated objects will be ſo much leſs, that even this ſuperior reſemblance will not ſatisfy us. Where the diſparity is very great, on the contrary, we are often contented with the moſt imperfect reſemblance; with the very imperfect reſemblance, for example, both as to figure and colour, of fruits and flowers in ſhell-work.

It may be obſerved, however, that, though in Sculpture the imitation of flowers and foliage pleaſes as an ornament of architecture, as a part of the dreſs which is to ſet off the beauty of a different and a more important object, it would not pleaſe alone, or as a ſeparate and unconnected object, in the ſame manner as a fruit and flower painting pleaſes. Flowers and foliage, how elegant and beautiful

tiful ſoever, are not ſufficiently intereſting; they have not dignity enough, if I may ſay ſo, to be proper ſubjects for a piece of Sculpture, which is to pleaſe alone, and not as the ornamental appendage of ſome other object.

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A good painter will often execute in a few days a ſubject which would employ the beſt tapeſtry-

tapeſtry-weaver for many years; though, in proportion to his time, therefore, the latter is always much worſe paid than the former, yet his work in the end comes commonly much dearer to market. The great expence of good Tapeſtry, the circumſtance which confines it to the palaces of princes and great lords, gives it, in the eyes of the greater part of the people, an air of riches and magnificence, which contributes ſtill further to compenſate the imperfection of its imitation. In arts which addreſs themſelves, not to the prudent and the wiſe, but to the rich and the great, to the proud and the vain, we ought not to wonder if the appearance of great expence, of being what few people can purchaſe, of being one of the ſureſt characteriſtics of great fortune, ſhould often ſtand in the place of exquiſite beauty, and contribute equally to recommend their productions. As the idea of expence ſeems often to embelliſh, ſo that of cheapneſs ſeems as frequently to tarniſh the luſtre even of very agreeable objects. The difference between real and falſe jewels is what even the experienced eye of a jeweller can ſometimes with difficulty diſtinguiſh. Let an unknown lady, however, come into a public aſſembly, with a head-dreſs which appears to be very richly adorned with diamonds, and let a jeweller only whiſper in our ear that they are falſe ſtones, not only

the lady will immediately ſink in our imagination from the rank of a princeſs to that of a very ordinary woman, but the head-dreſs, from an object of the moſt ſplendid magnificence, will at once become an impertinent piece of tawdry and tinſel finery.

It was ſome years ago the faſhion to ornament a garden with yew and holly trees, clipped into the artificial ſhapes of pyramids, and columns, and vaſes, and obeliſks. It is now the faſhion to ridicule this taſte as unnatural. The figure of a pyramid or obeliſk, however, is not more unnatural to a yew-tree than to a block of porphyry or marble. When the yew-tree is preſented to the eye in this artificial ſhape, the gardener does not mean that it ſhould be underſtood to have grown in that ſhape: he means, firſt, to give it the ſame beauty of regular figure, which pleaſes ſo much in porphyry and marble; and, ſecondly, to imitate in a growing tree the ornaments of thoſe precious materials: he means to make an object of one kind reſemble another object of a very different kind; and to the original beauty of figure to join the relative beauty of imitation: but the diſparity between the imitating and the imitated object is the foundation of the beauty of imitation. It is becauſe the one object does not naturally reſemble the other, that we are ſo much pleaſed with it, when by art

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it is made to do ſo. The ſhears of the gardener, it may be ſaid, indeed, are very clumſy inſtruments of Sculpture. They are ſo, no doubt, when employed to imitate the figures of men, or even of animals. But in the ſimple and regular forms of pyramids, vaſes, and obeliſks, even the ſhears of the gardener do well enough. Some allowance too is naturally made for the neceſſary imperfection of the inſtrument, in the ſame manner as in Tapeſtry and Needle-work. In ſhort, the next time you have an opportunity of ſurveying thoſe out-of-faſhion ornaments, endeavour only to let yourſelf alone, and to reſtrain for a few minutes the fooliſh paſſion for playing the critic, and you will be ſenſible that they are not without ſome degree of beauty; that they give the air of neatneſs and correct culture at leaſt to the whole garden; and that they are not unlike what the "retired leiſure, "that" (as Milton ſays) "in trim gardens "takes his pleaſure," might be amuſed with. What then, it may be ſaid, has brought them into ſuch univerſal diſrepute among us? In a pyramid or obeliſk of marble, we know that the materials are expenſive, and that the labour which wrought them into that ſhape muſt have been ſtill more ſo. In a pyramid or obeliſk of yew, we know that the materials could coſt very little, and the labour ſtill leſs. The former are ennobled by their expence;

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PART I. the latter degraded by their cheapneſs. In the cabbage-garden of a tallow-chandler we may ſometimes perhaps have ſeen as many columns and vaſes, and other ornaments in yew, as there are in marble and porphyry at Verſailles: it is this vulgarity which has diſgraced them. The rich and the great, their proud and the vain, will not admit into the gardens an ornament which the meaneſt of the people can have as well as they. The taſte for theſe ornaments came originally from France; where, notwithſtanding that inconſtancy of faſhion with which we ſometimes reproach the natives of that country, it ſtill continues in good repute. In France, the condition of the inferior ranks of people is ſeldom ſo happy as it frequently is in England; and you will there ſeldom find even pyramids and obeliſks of yew in the garden of a tallow-chandler. Such ornaments, not having in that country been degraded by their vulgarity, have not yet been excluded from the gardens of princes and great lords.

The works of the great maſters in Statuary and Painting, it is to be obſerved, never produce their effect by deception. They never are, and it never is intended that they ſhould be miſtaken for the real objects which they repreſent. Painted Statuary may ſometimes deceive an inattentive eye: proper Statuary never does. The little pieces of per-

perſpective in Painting, which it is intended ſhould pleaſe by deception, repreſent always ſome very ſimple, as well as inſignificant, object; a roll of paper, for example, or the ſteps of a ſtaircaſe, in the dark corner of ſome paſſage or gallery. They are generally the works too of ſome very inferior artiſts. After being ſeen once, and producing the little ſurpriſe which it is meant they ſhould excite, together with the mirth which commonly accompanies it, they never pleaſe more, but appear ever after inſipid and tiresome.

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The proper pleaſure which we derive from thoſe two imitative arts, ſo far from being the effect of deception, is altogether incompatible with it. That pleaſure is founded altogether upon our wonder at ſeeing an object of one kind repreſent ſo well an object of a very different kind, and upon our admiration of the art which ſurmounts ſo happily that diſparity which Nature had eſtabliſhed between them. The nobler works of Statuary and Painting appear to us a ſort of wonderful phænomena, differing in this reſpect from the wonderful phænomena of Nature, that they carry, as it were, their own explication along with them, and demonſtrate, even to the eye, the way and manner in which they are produced. The eye, even of an unſkilful ſpectator, immediately diſcerns, in ſome mea-

PART I. ſure, how it is that a certain modification of figure in Statuary, and of brighter and darker colours in Painting, can repreſent, with ſo much truth and vivacity, the actions, paſſions, and behaviour of men, as well as a great variety of other objects. The pleaſing wonder of ignorance is accompanied with the ſtill more pleaſing ſatisfaction of ſcience. We wonder and are amazed at the effect; and we are pleaſed ourſelves, and happy to find that we can comprehend, in ſome meaſure, how that wonderful effect is produced.

A good looking-glaſs repreſents the objects which are ſet before it with much more truth and vivacity than either Statuary or Painting. But, though the ſcience of optics may explain to the underſtanding, the looking-glaſs itſelf does not at all demonſtrate to the eye how this effect is brought about. It may excite the wonder of ignorance; and in a clown, who had never beheld a looking-glaſs before, I have ſeen that wonder riſe almoſt to rapture and extaſy; but it cannot give the ſatisfaction of ſcience. In all looking-glaſſes the effects are produced by the ſame means, applied exactly in the ſame manner. In every different ſtatue and picture the effects are produced, though by ſimilar, yet not by the ſame means; and thoſe means too are applied in a different manner in each. Every good ſtatue and picture is a freſh wonder, which at

at the ſame time carries, in ſome meaſure, its own explication along with it. After a little uſe and experience, all looking-glaſſes ceaſe to be wonders altogether; and even the ignorant become ſo familiar with them, as not to think that their effects require any explication. A looking-glaſs, beſides, can repreſent only preſent objects; and, when the wonder is once fairly over, we chooſe, in all caſes, rather to contemplate the ſubſtance than to gaze at the ſhadow. One's own face becomes then the moſt agreeable object which a looking-glaſs can repreſent to us, and the only object which we do not ſoon grow weary with looking at; it is the only preſent object of which we can ſee only the ſhadow: whether handſome or ugly, whether old or young, it is the face of a friend always, of which the features correſpond exactly with whatever ſentiment, emotion, or paſſion we may happen at that moment to feel.

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In Statuary, the means by which the wonderful effect is brought about appear more ſimple and obvious than in Painting; where the diſparity between the imitating and the imitated object being much greater, the art which can conquer that greater diſparity appears evidently, and almoſt to the eye, to be founded upon a much deeper ſcience, or upon principles much more abſtruſe and profound. Even in the meaneſt

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ſubjects we can often trace with pleaſure the ingenious means by which Painting ſurmounts this diſparity. But we cannot do this in Statuary, becauſe the diſparity not being ſo great, the means do not appear ſo ingenious. And it is upon this account, that in Painting we are often delighted with the repreſentation of many things, which in Statuary would appear inſipid, tireſome, and not worth the looking at.

It ought to be obſerved, however, that though in Statuary the art of imitation appears, in many reſpects, inferior to what it is in Painting, yet, in a room ornamented with both ſtatues and pictures of nearly equal merit, we ſhall generally find that the ſtatues draw off our eye from the pictures. There is generally but one, or little more than one, point of view from which a picture can be ſeen with advantage, and it always preſents to the eye preciſely the ſame object. There are many different points of view from which a ſtatue may be ſeen with equal advantage, and from each it preſents a different object. There is more variety in the pleaſure which we receive from a good ſtatue, than in that which we receive from a good picture; and one ſtatue may frequently be the ſubject of many good pictures or drawings, all different from one another. The ſhadowy relief and projection of a picture, beſides, is much flattened,

flattened, and ſeems almoſt to vaniſh away altogether, when brought into compariſon with the real and ſolid body which ſtands by it. How nearly ſoever theſe two arts may ſeem to be a-kin, they accord ſo very ill with one another, that their different productions ought, perhaps, ſcarce ever to be ſeen together. PART I.

PART II.

AFTER the pleaſures which ariſe from the gratification of the bodily appetites, there ſeem to be none more natural to man than Muſic and Dancing. In the progreſs of art and improvement they are, perhaps, the firſt and earlieſt pleaſures of his own invention; for thoſe which ariſe from the gratification of the bodily appetites cannot be ſaid to be of his own invention. No nation has yet been diſcovered ſo uncivilized as to be altogether without them. It ſeems even to be amongſt the moſt barbarous nations that the uſe and practice of them is both moſt frequent and moſt univerſal, as among the negroes of Africa and the ſavage tribes of America. In civilized nations, the inferior ranks of people have very little leiſure, and the PART II.

PART II. the ſuperior ranks have many other amuſements; neither the one nor the other, therefore, can ſpend much of their time in Muſic and Dancing. Among ſavage nations, the great body of the people have frequently great intervals of leiſure, and they have ſcarce any other amuſement; they naturally, therefore, ſpend a great part of their time in almoſt the only one they have.

What the ancients called Rhythmus, what we call Time or Meaſure, is the connecting principle of thoſe two arts; Muſic conſiſting in a ſucceſſion of a certain ſort of ſounds, and Dancing in a ſucceſſion of a certain ſort of ſteps, geſtures, and motions, regulated according to time or meaſure, and thereby formed into a ſort of whole or ſyſtem; which in the one art is called a ſong or tune, and in the other a dance; the time or meaſure of the dance correſponding always exactly with that of the ſong or tune which accompanies and directs it*.

The human voice, as it is always the beſt, ſo it would naturally be the firſt and earlieſt of all muſical inſtruments: in ſinging, or in its firſt attempts towards ſinging, it would naturally employ ſounds as ſimilar as poſſible to thoſe which it had been accuſtomed to; that is, it

* The Author's Obſervations on the Affinity between Muſic, Dancing, and Poetry, are annexed to the end of Part III. of this Eſſay.

would

would employ words of ſome kind or other, pronouncing them only in time and meaſure, and generally with a more melodious tone than had been uſual in common converſation. Thoſe words, however, might not, and probably would not, for a long time have any meaning, but might reſemble the ſyllables which we make uſe of in *fol-faing*, or the *derry-down-down* of our common ballads; and ſerve only to aſſiſt the voice in forming ſounds proper to be modulated into melody, and to be lengthened or ſhortened according to the time and meaſure of the tune. This rude form of vocal Muſic, as it is by far the moſt ſimple and obvious, ſo it naturally would be the firſt and earlieſt.

In the ſucceſſion of ages it could not fail to occur, that in the room of thoſe unmeaning or muſical words, if I may call them ſo, might be ſubſtituted words which expreſſed ſome ſenſe or meaning, and of which the pronunciation might coincide as exactly with the time and meaſure of the tune, as that of the muſical words had done before. Hence the origin of Verſe or Poetry. The Verſe would for a long time be rude and imperfect. When the meaning words fell ſhort of the meaſure required, they would frequently be eked out with the unmeaning ones, as is ſometimes done in our common ballads. When the

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PART II. public ear came to be ſo refined as to reject, in all ſerious Poetry, the unmeaning words altogether, there would ſtill be a liberty aſſumed of altering and corrupting, upon many occaſions, the pronunciation of the meaning ones, for the ſake of accommodating them to the meaſure. The ſyllables which compoſed them would, for this purpoſe, ſometimes be improperly lengthened, and ſometimes improperly ſhortened; and though no unmeaning words were made uſe of, yet an unmeaning ſyllable would ſometimes be ſtuck to the beginning, to the end, or into the middle of a word. All theſe expedients we find frequently employed in the verſes even of Chaucer, the father of the Engliſh Poetry. Many ages might paſs away before verſe was commonly compoſed with ſuch correctneſs, that the uſual and proper pronunciation of the words alone, and without any other artifice, ſubjected the voice to the obſervation of a time and meaſure, of the ſame kind with the time and meaſure of Muſic.

The Verſe would naturally expreſs ſome ſenſe which ſuited the grave or gay, the joyous or melancholy humour of the tune which it was ſung to; being as it were blended and united with that tune, it would ſeem to give ſenſe and meaning to what otherwiſe might not appear to have any, or at leaſt any which could

could be clearly and diſtinctly underſtood, without the accompaniment of ſuch an explication. PART II.

A pantomime dance may frequently anſwer the ſame purpoſe, and, by repreſenting ſome adventure in love or war, may ſeem to give ſenſe and meaning to a Muſic, which might not otherwiſe appear to have any. It is more natural to mimic, by geſtures and motions, the adventures of common life, than to expreſs them in Verſe or Poetry. The thought itſelf is more obvious, and the execution is much more eaſy. If this mimicry was accompanied by muſic, it would of its own accord, and almoſt without any intention of doing ſo, accommodate, in ſome meaſure, its different ſteps and movements to the time and meaſure of the tune; eſpecially if the ſame perſon both ſung the tune and performed the mimicry, as is ſaid to be frequently the caſe among the ſavage nations of Africa and America. Pantomime Dancing might in this manner ſerve to give a diſtinct ſenſe and meaning to Muſic many ages before the invention, or at leaſt before the common uſe of Poetry. We hear little, accordingly, of the Poetry of the ſavage nations of Africa and America, but a great deal of their pantomime dances.

Poetry, however, is capable of expreſſing many things fully and diſtinctly, which Dancing either cannot repreſent at all, or can

repreſent

PART II.

represent but obscurely and imperfectly; such as the reasonings and judgments of the understanding; the ideas, fancies, and suspicions of the imagination; the sentiments, emotions, and passions of the heart. In the power of expressing a meaning with clearness and distinctness, Dancing is superior to Music, and Poetry to Dancing.

Of those three Sister Arts, which originally, perhaps, went always together, and which at all times go frequently together, there are two which can subsist alone, and separate from their natural companions, and one which cannot. In the distinct observation of what the ancients called Rhythmus, of what we call Time and Measure, consists the essence both of Dancing and of Poetry or Verse; or the characteristical quality which distinguishes the former from all other motion and action, and the latter from all other discourse. But, concerning the proportion between those intervals and divisions of duration which constitute what is called time and measure, the ear, it would seem, can judge with much more precision than the eye; and Poetry, in the same manner as Music, addresses itself to the ear, whereas Dancing addresses itself to the eye. In Dancing, the rhythmus, the proper proportion, the time and measure of its motions, cannot distinctly be perceived, unless they are marked by the more distinct time and

meaſure of Muſic. It is otherwiſe in Poetry; no accompaniment is neceſſary to mark the meaſure of good Verſe. Muſic and Poetry, therefore, can each of them ſubſiſt alone; Dancing always requires the accompaniment of Muſic.

It is Inſtrumental Muſic which can beſt ſubſiſt apart, and ſeparate from both Poetry and Dancing. Vocal Muſic, though it may, and frequently does, conſiſt of notes which have no diſtinct ſenſe or meaning, yet naturally calls for the ſupport of Poetry. But "Muſic, married to immortal Verſe," as Milton ſays, or even to words of any kind which have a diſtinct ſenſe or meaning, is neceſſarily and eſſentially imitative. Whatever be the meaning of thoſe words, though, like many of the ſongs of ancient Greece, as well as ſome of thoſe of more modern times, they may expreſs merely ſome maxims of prudence and morality, or may contain merely the ſimple narrative of ſome important event, yet even in ſuch didactic and hiſtorical ſongs there will ſtill be imitation; there will ſtill be a thing of one kind, which by art is made to reſemble a thing of a very different kind; there will ſtill be Muſic imitating diſcourſe; there will ſtill be rhythmus and melody, ſhaped and faſhioned into the form either of a good moral counſel, or of an amuſing and intereſting ſtory.

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PART II.

In this firſt ſpecies of imitation, which being eſſential to, is therefore inſeparable from, all ſuch Vocal Muſic, there may, and there commonly is, added a ſecond. The words may, and commonly do, expreſs the ſituation of ſome particular perſon, and all the ſentiments and paſſions which he feels from that ſituation. It is a joyous companion who gives vent to the gaiety and mirth with which wine, feſtivity, and good company inſpire him. It is a lover who complains, or hopes, or fears, or deſpairs. It is a generous man who expreſſes either his gratitude for the favours, or his indignation at the injuries, which may have been done to him. It is a warrior who prepares himſelf to confront danger, and who provokes or deſires his enemy. It is a perſon in proſperity who humbly returns thanks for the goodneſs, or one in affliction who with contrition implores the mercy and forgiveneſs, of that inviſible Power to whom he looks up as the Director of all the events of human life. The ſituation may comprehend, not only one, but two, three, or more perſons; it may excite in them all either ſimilar or oppoſite ſentiments; what is a ſubject of ſorrow to one, being an occaſion of joy and triumph to another; and they may all expreſs, ſometimes ſeparately and ſometimes together, the particular way in which each of them is affected, as in a duo, trio, or a chorus.

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All this it may, and it frequently has been ſaid is unnatural; nothing being more ſo, than to ſing when we are anxious to perſuade, or in earneſt to expreſs any very ſerious purpoſe. But it ſhould be remembered, that to make a thing of one kind reſemble another thing of a very different kind, is the very circumſtance which, in all the Imitative Arts, conſtitutes the merits of imitation; and that to ſhape, and as it were to bend, the meaſure and the melody of Muſic, ſo as to imitate the tone and the language of counſel and converſation, the accent and the ſtyle of emotion and paſſion, is to make a thing of one kind reſemble another thing of a very different kind.

The tone and the movements of Muſic, though naturally very different from thoſe of converſation and paſſion, may, however, be ſo managed as to ſeem to reſemble them. On account of the great diſparity between the imitating and the imitated object, the mind in this, as in the other caſes, cannot only be contented, but delighted, and even charmed and tranſported, with ſuch an imperfect reſemblance as can be had. Such imitative Muſic, therefore, when ſung to words which explain and determine its meaning, may frequently appear to be a very perfect imitation. It is upon this account, that even the incomplete Muſic of a recitative ſeems to expreſs ſometimes all the ſedateneſs and compoſure of

PART II. ſerious but calm diſcourſe, and ſometimes all the exquiſite ſenſibility of the moſt intereſting paſſion. The more complete Muſic of an air is ſtill ſuperior, and, in the imitation of the more animated paſſions, has one great advantage over every ſort of diſcourſe, whether Proſe or Poetry, which is not ſung to Muſic. In a perſon who is either much depreſſed by grief or enlivened by joy, who is ſtrongly affected either with love or hatred, with gratitude or reſentment, with admiration or contempt, there is commonly one thought or idea which dwells upon his mind, which continually haunts him, which, when he has chaced it away, immediately returns upon him, and which in company makes him abſent and inattentive. He can think but of one object, and he cannot repeat to them that object ſo frequently as it recurs upon him. He takes refuge in ſolitude, where he can with freedom either indulge the extaſy or give way to the agony of the agreeable or diſagreeable paſſion which agitates him; and where he can repeat to himſelf, which he does ſometimes mentally, and ſometimes even aloud, and almoſt always in the ſame words, the particular thought which either delights or diſtreſſes him. Neither Proſe nor Poetry can venture to imitate thoſe almoſt endleſs repetitions of paſſion. They may deſcribe them as I do now, but they dare not imitate them; they would

would become moſt inſufferably tireſome if they did. The Muſic of a paſſionate air not only may, but frequently does, imitate them; and it never makes its way ſo directly or ſo irreſiſtibly to the heart as when it does ſo. It is upon this account that the words of an air, eſpecially of a paſſionate one, though they are ſeldom very long, yet are ſcarce ever ſung ſtraight on to the end, like thoſe of a recitative; but are almoſt always broken into parts, which are tranſpoſed and repeated again and again, according to the fancy or judgment of the compoſer. It is by means of ſuch repetitions only, that Muſic can exert thoſe peculiar powers of imitation which diſtinguiſh it, and in which it excels all the other Imitative Arts. Poetry and Eloquence, it has accordingly been often obſerved, produce their effect always by a connected variety and ſucceſſion of different thoughts and ideas: but Muſic frequently produces its effects by a repetition of the ſame idea; and the ſame ſenſe expreſſed in the ſame, or nearly the ſame, combination of ſounds, though at firſt perhaps it may make ſcarce any impreſſion upon us, yet, by being repeated again and again, it comes at laſt gradually, and by little and little, to move, to agitate, and to tranſport us.

To theſe powers of imitating, Muſic naturally, or rather neceſſarily, joins the happieſt

PART II. choice in the objects of its imitation. The ſentiments and paſſions which Muſic can beſt imitate are thoſe which unite and bind men together in ſociety; the ſocial, the decent, the virtuous, the intereſting and affecting, the amiable and agreeable, the awful and reſpectable, the noble, elevating, and commanding paſſions. Grief and diſtreſs are intereſting and affecting; humanity and compaſſion, joy and admiration, are amiable and agreeable; devotion is awful and reſpectable; the generous contempt of danger, the honourable indignation at injuſtice, are noble, elevating, and commanding. But it is theſe and ſuch like paſſions which Muſic is fitteſt for imitating, and which it in fact moſt frequently imitates. They are, if I may ſay ſo, all Muſical Paſſions; their natural tones are all clear, diſtinct, and almoſt melodious; and they naturally expreſs themſelves in a language which is diſtinguiſhed by pauſes at regular, and almoſt equal, intervals; and which, upon that account, can more eaſily be adapted to the regular returns of the correſpondent periods of a tune. The paſſions, on the contrary, which drive men from one another, the unſocial, the hateful, the indecent, the vicious paſſions, cannot eaſily be imitated by Muſic. The voice of furious anger, for example, is harſh and diſcordant; its periods are all irregular, ſometimes very long and ſometimes very

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ſhort, and diſtinguiſhed by no regular pauſes. The obſcure and almoſt inarticulate grumblings of black malice and envy, the ſcreaming outcries of daſtardly fear, the hideous growlings of brutal and implacable revenge, are all equally diſcordant. It is with difficulty that Muſic can imitate any of thoſe paſſions, and the Muſic which does imitate them is not the moſt agreeable. A whole entertainment may conſiſt, without any impropriety, of the imitation of the ſocial and amiable paſſions. It would be a ſtrange entertainment which conſiſted altogether in the imitation of the odious and the vicious. A ſingle ſong expreſſes almoſt always ſome ſocial, agreeable, or intereſting paſſion. In an opera the unſocial and diſagreeable are ſometimes introduced, but it is rarely, and as diſcords are introduced into harmony, to ſet off by their contraſt the ſuperior beauty of the oppoſite paſſions. What Plato ſaid of Virtue, that it was of all beauties the brighteſt, may with ſome ſort of truth be ſaid of the proper and natural objects of muſical imitation. They are either the ſentiments and paſſions, in the exerciſe of which conſiſt both the glory and the happineſs of human life, or they are thoſe from which it derives its moſt delicious pleaſures, and moſt enlivening joys; or, at the worſt and the loweſt, they are thoſe by which it calls upon our indulgence and compaſſionate

PART II. assistance to its unavoidable weaknesses, its distresses, and its misfortunes.

To the merit of its imitation and to that of its happy choice in the objects which it imitates, the great merits of Statuary and Painting, Music joins another peculiar and exquisite merit of its own. Statuary and Painting cannot be said to add any new beauties of their own to the beauties of Nature which they imitate; they may assemble a greater number of those beauties, and group them in a more agreeable manner than they are commonly, or perhaps ever, to be found in Nature. It may perhaps be true, what the artists are so very fond of telling us, that no woman ever equalled, in all the parts of her body, the beauty of the Venus of Medicis, nor any man that of the Apollo of Belvidere. But they must allow, surely, that there is no particular beauty in any part or feature of those two famous statues, which is not at least equalled, if not much excelled, by what is to be found in many living subjects. But Music, by arranging, and as it were bending to its own time and measure, whatever sentiments and passions it expresses, not only assembles and groups, as well as Statuary and Painting, the different beauties of Nature which it imitates, but it clothes them, besides, with a new and an exquisite beauty of its own; it clothes them with melody and harmony, which, like

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a transparent mantle, far from concealing any beauty, serve only to give a brighter colour, a more enlivening lustre, and a more engaging grace to every beauty which they infold.

To these two different sorts of imitation,—to that general one, by which Music is made to resemble discourse, and to that particular one, by which it is made to express the sentiments and feelings with which a particular situation inspires a particular person,—there is frequently joined a third. The person who sings may join to this double imitation of the singer the additional imitation of the actor; and express, not only by the modulation and cadence of his voice, but by his countenance, by his attitudes, by his gestures, and by his motions, the sentiments and feelings of the person whose situation is painted in the song. Even in private company, though a song may sometimes perhaps be said to be well sung, it can never be said to be well performed, unless the singer does something of this kind; and there is no comparison between the effect of what is sung coldly from a music-book at the end of a harpsichord, and of what is not only sung, but acted with proper freedom, animation, and boldness. An opera actor does no more than this; and an imitation which is so pleasing, and which appears even so natural, in private society, ought not to appear forced, unnatural, or disagreeable upon the stage.

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In a good opera actor, not only the modulations and pauſes of his voice, but every motion and geſture, every variation, either in the air of his head, or in the attitude of his body, correſpond to the time and meaſure of Muſic: they correſpond to the expreſſion of the ſentiment or paſſion which the Muſic imitates, and that expreſſion neceſſarily correſponds to this time and meaſure. Muſic is as it were the ſoul which animates him, which informs every feature of his countenance, and even directs every movement of his eyes. Like the muſical expreſſion of a ſong, his action adds to the natural grace of the ſentiment or action which it imitates, a new and peculiar grace of its own; the exquiſite and engaging grace of thoſe geſtures and motions, of thoſe airs and attitudes which are directed by the movement, by the time and meaſure of Muſic; this grace heightens and enlivens that expreſſion. Nothing can be more deeply affecting than the intereſting ſcenes of the ſerious opera, when to good Poetry and good Muſic, to the Poetry of Metaſtaſio and the Muſic of Pergoleſe, is added the execution of a good actor. In the ſerious opera, indeed, the action is too often ſacrificed to the Muſic; the caſtrati, who perform the principal parts, being always the moſt inſipid and miſerable actors. The ſprightly airs of the comic opera are, in the ſame manner, in the higheſt degree enlivening

enlivening and diverting. Though they do not make us laugh ſo loud as we ſometimes do at the ſcenes of the common comedy, they make us ſmile more frequently; and the agreeable gaiety, the temperate joy, if I may call it ſo, with which they inſpire us, is not only an elegant, but a moſt delicious pleaſure. The deep diſtreſs and the great paſſions of tragedy are capable of producing ſome effect, though it ſhould be but indifferently acted. It is not ſo with the lighter misfortunes and leſs affecting ſituations of comedy: unleſs it is at leaſt tolerably acted, it is altogether inſupportable. But the caſtrati are ſcarce ever tolerable actors; they are accordingly ſeldom admitted to play in the comic opera; which, being upon that account commonly better performed than the ſerious, appears to many people the better entertainment of the two.

The imitative powers of Inſtrumental are much inferior to thoſe of Vocal Muſic; its melodious but unmeaning and inarticulated ſounds cannot, like the articulations of the human voice, relate diſtinctly the circumſtances of any particular ſtory, or deſcribe the different ſituations which thoſe circumſtances produced; or even expreſs clearly, and ſo as to be underſtood by every hearer, the various ſentiments and paſſions which the parties concerned felt from theſe ſituations: even its imitation of other ſounds, the objects which it

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PART II. can certainly beſt imitate, is commonly ſo indiſtinct, that alone, and without any explication, it might not readily ſuggeſt to us what was the imitated object. The rocking of a cradle is ſuppoſed to be imitated in that concerto of Correlli, which is ſaid to have been compoſed for the Nativity: but unleſs we were told beforehand, it might not readily occur to us what it meant to imitate, or whether it meant to imitate any thing at all; and this imitation (which, though perhaps as ſucceſsful as any other, is by no means the diſtinguiſhed beauty of that admired compoſition) might only appear to us a ſingular and odd paſſage in Muſic. The ringing of bells and the ſinging of the lark and nightingale are imitated in the ſymphony of Inſtrumental Muſic which Mr. Handel has compoſed for the Allegro and Penſeroſo of Milton: theſe are not only ſounds but muſical ſounds, and may therefore be ſuppoſed to be more within the compaſs of the powers of muſical imitation. It is accordingly univerſally acknowledged, that in theſe imitations this great maſter has been remarkably ſucceſsful; and yet, unleſs the verſes of Milton explained the meaning of the Muſic, it might not even in this caſe readily occur to us what it meant to imitate, or whether it meant to imitate any thing at all. With the explication of the words, indeed, the imitation appears, what it

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certainly is, a very fine one; but without that explication it might perhaps appear only a ſingular paſſage, which had leſs connexion either with what went before or with what came after it, than any other in the Muſic. PART II.

Inſtrumental Muſic is ſaid ſometimes to imitate motion; but in reality it only either imitates the particular ſounds which accompany certain motions, or it produces ſounds of which the time and meaſure bear ſome correſpondence to the variations, to the pauſes and interruptions, to the ſucceſſive accelerations and retardations of the motion which it means to imitate: it is in this way that it ſometimes attempts to expreſs the march and array of an army, the confuſion and hurry of a battle, &c. In all theſe caſes, however, its imitation is ſo very indiſtinct, that without the accompaniment of ſome other art, to explain and interpret its meaning, it would be almoſt always unintelligible; and we could ſcarce ever know with certainty, either what it meant to imitate, or whether it meant to imitate any thing at all.

In the imitative arts, though it is by no means neceſſary that the imitating ſhould ſo exactly reſemble the imitated object, that the one ſhould ſometimes be miſtaken for the other, it is, however, neceſſary that they ſhould reſemble at leaſt ſo far, that the one ſhould always readily ſuggeſt the other. It would

PART II. would be a ſtrange picture which required an inſcription at the foot to tell us, not only what particular perſon it meant to repreſent, but whether it meant to repreſent a man or a horſe, or whether it meant to be a picture at all, and to repreſent any thing. The imitations of inſtrumental Muſic may, in ſome reſpects, be ſaid to reſemble ſuch pictures. There is, however, this very eſſential difference between them, that the picture would not be much mended by the inſcription; whereas, by what may be conſidered as very little more than ſuch an inſcription, inſtrumental Muſic, though it cannot always even then, perhaps, be ſaid properly to imitate, may, however, produce all the effects of the fineſt and moſt perfect imitation. In order to explain in what manner this is brought about, it will not be neceſſary to deſcend into any great depth of philoſophical ſpeculation.

That train of thoughts and ideas which is continually paſſing through the mind does not always move on with the ſame pace, if I may ſay ſo, or with the ſame order and connection. When we are gay and cheerful, its motion is briſker and more lively, our thoughts ſucceed one another more rapidly, and thoſe which immediately follow one another ſeem frequently either to have but little connection, or to be connected rather by their oppoſition than by their mutual reſemblance. As in this

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wanton and playful diſpoſition of mind we hate to dwell long upon the ſame thought, ſo we do not much care to purſue reſembling thoughts; and the variety of contraſt is more agreeable to us than the ſameneſs of reſemblance. It is quite otherwiſe when we are melancholy and deſponding; we then frequently find ourſelves haunted, as it were, by ſome thought which we would gladly chaſe away, but which conſtantly purſues us, and which admits no followers, attendants, or companions, but ſuch as are of its own kindred and complexion. A ſlow ſucceſſion of reſembling or cloſely connected thoughts is the characteriſtic of this diſpoſition of mind; a quick ſucceſſion of thoughts, frequently contraſted and in general very ſlightly connected, is the characteriſtic of the other. What may be called the natural ſtate of the mind, the ſtate in which we are neither elated nor dejected, the ſtate of ſedateneſs, tranquillity, and compoſure, holds a ſort of middle place between thoſe two oppoſite extremes; our thoughts ſucceed one another more ſlowly, and with a more diſtinct connection, than in the one; more quickly and with a greater variety, than in the other.

Acute ſounds are naturally gay, ſprightly, and enlivening; grave ſounds ſolemn, awful, and melancholy. There ſeems too to be ſome natural connection between acuteneſs in tune

and

PART II. and quickneſs in time or ſucceſſion, as well as between gravity and flowneſs: an acute ſound ſeems to fly off more quickly than a grave one: the treble is more cheerful than the baſs; its notes likewiſe commonly ſucceed one another more rapidly. But inſtrumental Muſic, by a proper arrangement, by a quicker or ſlower ſucceſſion of acute and grave, of reſembling and contraſted ſounds, can not only accommodate itſelf to the gay, the ſedate, or the melancholy mood; but if the mind is ſo far vacant as not to be diſturbed by any diſorderly paſſion, it can, at leaſt for the moment, and to a certain degree, produce every poſſible modification of each of thoſe moods or diſpoſitions. We all readily diſtinguiſh the cheerful, the gay, and the ſprightly Muſic, from the melancholy, the plaintive, and the affecting; and both theſe from what holds a ſort of middle place between them, the ſedate, the tranquil, and the compoſing. And we are all ſenſible that, in the natural and ordinary ſtate of the mind, Muſic can, by a ſort of incantation, ſooth and charm us into ſome degree of that particular mood or diſpoſition which accords with its own character and temper. In a concert of inſtrumental Muſic the attention is engaged, with pleaſure and delight, to liſten to a combination of the moſt agreeable and melodious ſounds, which follow one another, ſometimes with a quicker, and ſometimes with a ſlower

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ſucceſſion; and in which thoſe that immediately follow one another ſometimes exactly or nearly reſemble, and ſometimes contraſt with one another in tune, in time, and in order of arrangement. The mind being thus ſucceſſively occupied by a train of objects, of which the nature, ſucceſſion, and connection correſpond, ſometimes to the gay, ſometimes to the tranquil, and ſometimes to the melancholy mood or diſpoſition, it is itſelf ſucceſſively led into each of thoſe moods or diſpoſitions; and is thus brought into a ſort of harmony or concord with the Muſic which ſo agreeably engages its attention.

It is not, however, by imitation properly, that inſtrumental Muſic produces this effect: inſtrumental Muſic does not imitate, as vocal Muſic, as Painting, or as Dancing would imitate, a gay, a ſedate, or a melancholy perſon; it does not tell us, as any of thoſe other arts could tell us, a pleaſant, a ſerious, or a melancholy ſtory. It is not, as in vocal Muſic, in Painting, or in Dancing, by ſympathy with the gaiety, the ſedateneſs, or the melancholy and diſtreſs of ſome other perſon, that inſtrumental Muſic ſoothes us into each of theſe diſpoſitions: it becomes itſelf a gay, a ſedate, or a melancholy object; and the mind naturally aſſumes the mood or diſpoſition which at the time correſponds to the object which engages its attention. Whatever we feel from

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inſtrumental Muſic is an original, and not a ſympathetic feeling: it is our own gaiety, ſedateneſs, or melancholy; not the reflected diſpoſition of another perſon.

When we follow the winding alleys of ſome happily ſituated and well laid out garden, we are preſented with a ſucceſſion of landſcapes, which are ſometimes gay, ſometimes gloomy, and ſometimes calm and ſerene; if the mind is in its natural ſtate, it ſuits itſelf to the objects which ſucceſſively preſent themſelves, and varies in ſome degree its mood and preſent humour with every variation of the ſcene. It would be improper, however, to ſay that thoſe ſcenes imitated the gay, the calm, or the melancholy mood of the mind; they may produce in their turn each of thoſe moods, but they cannot imitate any of them. Inſtrumental Muſic, in the ſame manner, though it can excite all thoſe different diſpoſitions, cannot imitate any of them. There are no two things in nature more perfectly diſparate than ſound and ſentiment; and it is impoſſible by any human power to faſhion the one into any thing that bears any real reſemblance to the other.

This power of exciting and varying the different moods and diſpoſitions of the mind, which inſtrumental Muſic really poſſeſſes to a very conſiderable degree, has been the principal ſource of its [illegible]ation for thoſe great imitative

imitative powers which have been aſcribed to it. " Painting," ſays an Author, more capable of feeling ſtrongly than of analiſing accurately, Mr. Rouſſeau of Geneva, " Painting, " which preſents its imitations, not to the " imagination, but to the ſenſes, and to only " one of the ſenſes, can repreſent nothing " beſides the objects of ſight. Muſic, one " might imagine, ſhould be equally confined " to thoſe of hearing. It imitates, however, " every thing, even thoſe objects which are " perceivable by ſight only. By a deluſion " that ſeems almoſt inconceivable, it can, as " it were, put the eye into the ear; and the " greateſt wonder, of an art which acts only " by motion and ſucceſſion, is, that it can " imitate reſt and repoſe. Night, Sleep, So- " litude, and Silence are all within the com- " paſs of muſical imitation. Though all " Nature ſhould be aſleep, the perſon who " contemplates it is awake; and the art of " the muſician conſiſts in ſubſtituting, in the " room of an image of what is not the object " of hearing, that of the movements which " its preſence would excite in the mind of " the ſpectator."—That is, of the effects which it would produce upon his mood and diſpoſition. " The muſician (continues the " ſame Author) will ſometimes, not only agi- " tate the waves of the ſea, blow up the flames " of a conflagration, make the rain fall, the

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"rivulets flow and ſwell the torrents, but he "will paint the horrors of a hideous deſart, "darken the walls of a ſubterraneous dun-"geon, calm the tempeſt, reſtore ſerenity "and tranquillity to the air and the ſky, and "ſhed from the orcheſtre a new freſhneſs "over the groves and the fields. He will "not directly repreſent any of theſe objects, "but he will excite in the mind the ſame "movements which it would feel from ſeeing "them."

Upon this very eloquent deſcription of Mr. Rouſſeau I muſt obſerve, that without the accompaniment of the ſcenery and action of the opera, without the aſſiſtance either of the ſcene-painter or of the poet, or of both, the inſtrumental Muſic of the orcheſtre could produce none of the effects which are here aſcribed to it; and we could never know, we could never even gueſs, which of the gay, melancholy, or tranquil objects above mentioned it meant to repreſent to us; or whether it meant to repreſent any of them, and not merely to entertain us with a concert of gay, melancholy, or tranquil Muſic; or, as the ancients called them, of the Diaſtaltic, of the Syſtaltic, or of the Middle Muſic. With that accompaniment, indeed, though it cannot always even then, perhaps, be ſaid properly to imitate, yet by ſupporting the imitation of ſome other art, it may produce all the ſame

effects upon us as if itſelf had imitated in the fineſt and moſt perfect manner. Whatever be the object or ſituation which the ſcene-painter repreſents upon the theatre, the Muſic of the orcheſtre, by diſpoſing the mind to the ſame ſort of mood and temper which it would feel from the preſence of that object, or from ſympathy with the perſon who was placed in that ſituation, can greatly enhance the effect of that imitation: it can accommodate itſelf to every diverſity of ſcene. The melancholy of the man who, upon ſome great occaſion, only finds himſelf alone in the darkneſs, the ſilence and ſolitude of the night, is very different from that of one who, upon a like occaſion, finds himſelf in the midſt of ſome dreary and inhoſpitable deſert; and even in this ſituation his feelings would not be the ſame as if he was ſhut up in a ſubterraneous dungeon. The different degrees of preciſion with which the Muſic of the orcheſtre can accommodate itſelf to each of thoſe diverſities, muſt depend upon the taſte, the ſenſibility, the fancy and imagination of the compoſer: it may ſometimes, perhaps, contribute to this preciſion, that it ſhould imitate, as well as it can, the ſounds which either naturally accompany, or which might be ſuppoſed to accompany, the particular objects repreſented. The ſymphony in the French opera of Alcyone, which imitated the violence of the winds and

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the dashing of the waves, in the tempest which was to drown Coix, is much commended by cotemporary writers. That in the opera of Isse, which imitated that murmuring in the leaves of the oaks of Dodona, which might be supposed to precede the miraculous pronunciation of the oracle: and that in the opera of Amadis, of which the dismal accents imitated the sounds which might be supposed to accompany the opening of the tomb of Ardan, before the apparition of the ghost of that warrior, are still more celebrated. Instrumental Music, however, without violating too much its own melody and harmony, can imitate but imperfectly the sounds of natural objects, of which the greater part have neither melody nor harmony. Great reserve, great discretion, and a very nice discernment are requisite, in order to introduce with propriety such imperfect imitations, either into Poetry or Music; when repeated too often, when continued too long, they appear to be what they really are, mere tricks, in which a very inferior artist, if he will only give himself the trouble to attend to them, can easily equal the greatest. I have seen a Latin translation of Mr. Pope's Ode on St. Cecilia's Day, which in this respect very much excelled the original. Such imitations are still easier in Music. Both in the one art and in the other, the difficulty is not in making them as well as they are capable of being made, but

but in knowing when and how far to make them at all: but to be able to accommodate the temper and character of the Muſic to every peculiarity of the ſcene and ſituation with ſuch exact preciſion, that the one ſhall produce the very ſame effect upon the mind as the other, is not one of thoſe tricks in which an inferior artiſt can eaſily equal the greateſt; it is an art which requires all the judgment, knowledge, and invention of the moſt conſummate maſter. It is upon this art, and not upon its imperfect imitation, either of real or imaginary ſounds, that the great effects of inſtrumental Muſic depend; ſuch imitations ought perhaps to be admitted only ſo far as they may ſometimes contribute to aſcertain the meaning, and thereby to enhance the effects of this art.

By endeavouring to extend the effects of ſcenery beyond what the nature of the thing will admit of, it has been much abuſed; and in the common, as well as in the muſical drama, many imitations have been attempted, which, after the firſt and ſecond time we have ſeen them, neceſſarily appear ridiculous: ſuch are, the Thunder rumbling from the Muſtard-bowl, and the Snow of Paper and thick Hail of Peaſe, ſo finely expoſed by Mr. Pope. Such imitations reſemble thoſe of painted Statuary; they may ſurpriſe at firſt, but they diſguſt ever after, and appear evidently ſuch ſimple and eaſy tricks as are fit only for the amuſement

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This abuſe of ſcenery has both ſubſiſted much longer, and been carried to a much greater degree of extravagance, in the muſical than in the common drama. In France it has been long baniſhed from the latter; but it ſtill continues, not only to be tolerated, but to be admired and applauded in the former. In the French operas, not only thunder and lightning, ſtorms and tempeſts, are commonly repreſented in the ridiculous manner above mentioned, but all the marvellous, all the ſupernatural of Epic Poetry, all the metamorphoſes of Mythology, all the wonders of Witchcraft and Magic, every thing that is moſt unfit to be repreſented upon the ſtage, are every day exhibited with the moſt complete approbation and applauſe of that ingenious nation. The muſic of the orcheſtre producing upon the audience nearly the ſame effect which a better and more artful imitation would produce, hinders them from feeling,

feeling, at leaſt in its full force, the ridicule of thoſe childiſh and aukward imitations which neceſſarily abound in that extravagant ſcenery. And in reality ſuch imitations, though no doubt ridiculous every where, yet certainly appear ſomewhat leſs ſo in the muſical than they would in the common drama. The Italian opera, before it was reformed by Apoſtolo, Zeno, and Metaſtaſio, was in this reſpect equally extravagant, and was upon that account the ſubject of the agreeable raillery of Mr. Addiſon in ſeveral different papers of the Spectator. Even ſince that reformation it ſtill continues to be a rule, that the ſcene ſhould change at leaſt with every act; and the unity of place never was a more ſacred law in the common drama, than the violation of it has become in the muſical: the latter ſeems in reality to require both a more pictureſque and a more varied ſcenery, than is at all neceſſary for the former. In an opera, as the Muſic ſupports the effect of the ſcenery, ſo the ſcenery often ſerves to determine the character, and to explain the meaning of the Muſic; it ought to vary therefore as that character varies. The pleaſure of an opera, beſides, is in its nature more a ſenſual pleaſure, than that of a common comedy or tragedy; the latter produce their effect principally by means of the imagination: in the cloſet, accordingly, their effect is not much

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inferior to what it is upon the ſtage. But the effect of an opera is ſeldom very great in the cloſet; it addreſſes itſelf more to the external ſenſes, and as it ſoothes the ear by its molody and harmony, ſo we feel that it ought to dazzle the eye with the ſplendour and variety of its ſcenery.

In an opera the inſtrumental Muſic of the orcheſtre ſupports the imitation both of the poet and of the actor, as well as of the ſcene-painter. The overture diſpoſes the mind to that mood which fits it for the opening of the piece. The Muſic between the acts keeps up the impreſſion which the foregoing had made, and prepares us for that which the following is to make. When the orcheſtre interrupts, as it frequently does, either the recitative or the air, it is in order either to enforce the effect of what had gone before, or to put the mind in the mood which fits it for hearing what is to come after. Both in the recitatives and in the airs it accompanies and directs the voice, and often brings it back to the proper tone and modulation, when it is upon the point of wandering away from them; and the correctneſs of the beſt vocal Muſic is owing in a great meaſure to the guidance of inſtrumental; though in all theſe caſes it ſupports the imitation of another art, yet in all of them it may be ſaid rather to diminiſh than to increaſe the reſemblance between the imitating and the imitated

imitated object. Nothing can be more unlike to what really passes in the world, than that persons engaged in the most interesting situations, both of public and private life, in sorrow, in disappointment, in distress, in despair, should, in all that they say and do, be constantly accompanied with a fine concert of instrumental Music. Were we to reflect upon it, such accompaniment must in all cases diminish the probability of the action, and render the representation still less like nature than it otherwise would be. It is not by imitation, therefore, that instrumental Music supports and enforces the imitations of the other arts; but it is by producing upon the mind, in consequence of other powers, the same sort of effect which the most exact imitation of nature, which the most perfect observation of probability, could produce. To produce this effect is, in such entertainments, the sole end and purpose of that imitation and observation. If it can be equally well produced by other means, this end and purpose may be equally well answered.

But if instrumental Music can seldom be said to be properly imitative, even when it is employed to support the imitation of some other art, it is commonly still less so when it is employed alone. Why should it embarrass its melody and harmony, or constrain its time and measure, by attempting an imitation

which,

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parts and divisions, by which we are enabled both to remember better what is gone before, and frequently to foresee somewhat of what is to come after: we frequently foresee the return of a period which we know must correspond to another which we remember to have gone before; and, according to the saying of an ancient philosopher and musician, the enjoyment of Music arises partly from memory and partly from foresight. When the measure, after having been continued so long as to satisfy us, changes to another, that variety, which thus disappoints, becomes more agreeable to us than the uniformity which would have gratified our expectation: but without this order and method we could remember very little of what had gone before, and we could foresee still less of what was to come after; and the whole enjoyment of Music would be equal to little more than the effect of the particular sounds which rung in our ears at every particular instant. By means of this order and method it is, during the progress of the entertainment, equal to the effect of all that we remember, and of all that we foresee; and at the conclusion, to the combined and accumulated effect of all the different parts of which the whole was composed.

A well-composed concerto of instrumental Music, by the number and variety of the instru-

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inſtruments, by the variety of the parts which are performed by them, and the perfect concord or correſpondence of all theſe different parts; by the exact harmony or coincidence of all the different ſounds which are heard at the ſame time, and by that happy variety of meaſure which regulates the ſucceſſion of thoſe which are heard at different times, preſents an object ſo agreeable, ſo great, ſo various, and ſo intereſting, that alone, and without ſuggeſting any other object, either by imitation or otherwiſe, it can occupy, and as it were fill up, completely the whole capacity of the mind, ſo as to leave no part of its attention vacant for thinking of any thing elſe. In the contemplation of that immenſe variety of agreeable and melodious ſounds, arranged and digeſted, both in their coincidence and in their ſucceſſion, into ſo complete and regular a ſyſtem, the mind in reality enjoys not only a very great ſenſual, but a very high intellectual, pleaſure, not unlike that which it derives from the contemplation of a great ſyſtem in any other ſcience. A full concerto of ſuch inſtrumental Muſic, not only does not require, but it does not admit of any accompaniment. A ſong or a dance, by demanding an attention which we have not to ſpare, would diſturb, inſtead of heightening, the effect of the Muſic; they may often very properly ſucceed, but they cannot

accom-

accompany it. That muſic ſeldom means to tell any particular ſtory, or to imitate any particular event, or in general to ſuggeſt any particular object, diſtinct from that combination of ſounds of which itſelf is compoſed. Its meaning, therefore, may be ſaid to be complete in itſelf, and to require no interpreters to explain it. What is called the ſubject of ſuch Muſic is merely, as has already been ſaid, a certain leading combination of notes, to which it frequently returns, and to which all its digreſſions and variations bear a certain affinity. It is altogether different from what is called the ſubject of a poem or a picture, which is always ſomething which is not either in the poem or in the picture, or ſomething quite diſtinct from that combination, either of words on the one hand, or of colours on the other, of which they are reſpectively compoſed. The ſubject of a compoſition of inſtrumental Muſic is a part of that compoſition: the ſubject of a poem or picture is no part of either.

The effect of inſtrumental Muſic upon the mind has been called its expreſſion. In the feeling it is frequently not unlike the effect of what is called the expreſſion of Painting, and is ſometimes equally intereſting. But the effect of the expreſſion of Painting ariſes always from the thought of ſomething which, though diſtinctly and clearly ſuggeſted by the

T the drawing and colouring of the picture, is altogether different from that drawing and colouring. It arifes fometimes from fympathy with, fometimes from antipathy and averfion to, the fentiments, emotions, and paffions which the countenance, the action, the air and attitude of the perfons reprefented fuggeft. The melody and harmony of inftrumental Mufic, on the contrary, do not diftinctly and clearly fuggeft any thing that is different from that melody and harmony. Whatever effect it produces is the immediate effect of that melody and harmony, and not of fomething elfe which is fignified and fuggefted by them: they in fact fignify and fuggeft nothing. It may be proper to fay that the complete art of painting, the complete merit of a picture, is compofed of three diftinct arts or merits; that of drawing, that of colouring, and that of expreffion. But to fay, as Mr. Avifon does, that the complete art of a mufician, the complete merit of a piece of Mufic, is compofed or made up of three diftinct arts or merits, that of melody, that of harmony, and that of expreffion, is to fay, that it is made up of melody and harmony, and of the immediate and neceffary effect of melody and harmony: the divifion is by no means logical; expreffion in painting is not the neceffary effect either of good drawing or of good colouring, or of both together;

together; a picture may be both finely drawn and finely coloured, and yet have very little expreſſion: but that effect upon the mind which is called expreſſion in Muſic, is the immediate and neceſſary effect of good melody. In the power of producing this effect conſiſts the eſſential characteriſtic which diſtinguiſhes ſuch melody from what is bad or indifferent. Harmony may enforce the effect of good melody, but without good melody the moſt ſkilful harmony can produce no effect which deſerves the name of expreſſion; it can do little more than fatigue and confound the ear. A painter may poſſeſs, in a very eminent degree, the talents of drawing and colouring, and yet poſſeſs that of expreſſion in a very inferior degree. Such a painter, too, may have great merit. In the judgment of Du Piles, even the celebrated Titian was a painter of this kind. But to ſay that a muſician poſſeſſed the talents of melody and harmony in a very eminent degree, and that of expreſſion in a very inferior one, would be to ſay, that in his works the cauſe was not followed by its neceſſary and proportionable effect. A muſician may be a very ſkilful harmoniſt, and yet be defective in the talents of melody, air, and expreſſion; his ſongs may be dull and without effect. Such a muſician too may have a certain degree of merit, not unlike that of a man of great learning,

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Instrumental Music, therefore, though it may, no doubt, be considered in some respects as an imitative art, is certainly less so than any other which merits that appellation; it can imitate but a few objects, and even these so imperfectly, that without the accompaniment of some other art, its imitation is scarce ever intelligible: imitation is by no means essential to it, and the principal effect which it is capable of producing arises from powers altogether different from those of imitation.

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PART III. THE imitative powers of Dancing are much superior to those of instrumental Music, and are at least equal, perhaps superior, to those of any other art. Like instrumental Music, however, it is not necessarily or essentially imitative, and it can produce very agreeable effects, without imitating any thing. In the greater part of our common dances there is little or no imitation, and they consist almost entirely of a succession of such steps, gestures, and motions, regulated by the time and measure of Music, as either

display

display extraordinary grace or require extraordinary agility. Even some of our dances, which are said to have been originally imitative, have, in the way in which we practise them, almost ceased to be so. The minuet, in which the woman, after passing and repassing the man several times, first gives him up one hand, then the other, and then both hands, is said to have been originally a Moorish dance, which emblematically represented the passion of love. Many of my readers may have frequently danced this dance, and, in the opinion of all who saw them, with great grace and propriety, though neither they nor their spectators once thought of the allegorical meaning which it orginally intended to express.

A certain measured, cadenced step, commonly called a dancing step, which keeps time with, and as it were beats the measure of, the Music which accompanies and directs it, is the essential characteristic which distinguishes a dance from every other sort of motion. When the dancer, moving with a step of this kind, and observing this time and measure, imitates either the ordinary or the more important actions of human life, he shapes and fashions, as it were, a thing of one kind, into the resemblance of another thing of a very different kind: his art conquers the disparity which Nature has placed between

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the imitating and the imitated object, and has upon that account ſome degree of that ſort of merit which belongs to all the imitative arts. This diſparity, indeed, is not ſo great as in ſome other of thoſe arts, nor conſequently the merit of the imitation which conquers it. Nobody would compare the merit of a good imitative dancer to that of a good painter or ſtatuary. The dancer, however, may have a very conſiderable degree of merit, and his imitation perhaps may ſometimes be capable of giving us as much pleaſure as that of either of the other two artiſts. All the ſubjects, either of Statuary or of Hiſtory Painting, are within the compaſs of his imitative powers; and in repreſenting them, his art has even ſome advantage over both the other two. Statuary and Hiſtory Painting can repreſent but a ſingle inſtant of the action which they mean to imitate: the cauſes which prepared, the conſequences which followed, the ſituation of that ſingle inſtant are altogether beyond the compaſs of their imitation. A pantomime dance can repreſent diſtinctly thoſe cauſes and conſequences; it is not confined to the ſituation of a ſingle inſtant; but, like Epic Poetry, it can repreſent all the events of a long ſtory, and exhibit a long train and ſucceſſion of connected and intereſting ſituations. It is capable therefore of affecting us much more than either

either Statuary or Painting. The ancient Romans uſed to ſhed tears at the repreſentations of their pantomimes, as we do at that of the moſt intereſting tragedies; an effect which is altogether beyond the powers of Statuary or Painting.

The ancient Greeks appear to have been a nation of dancers, and both their common and their ſtage dances ſeem to have been all imitative. The ſtage dances of the ancient Romans appear to have been equally ſo. Among that grave people it was reckoned indecent to dance in private ſocieties; and they could therefore have no common dances. Among both nations imitation ſeems to have been conſidered as eſſential to dancing.

It is quite otherwiſe in modern times: though we have pantomime dances upon the ſtage, yet the greater part even of our ſtage dances are not pantomime, and cannot well be ſaid to imitate any thing. The greater part of our common dances either never were pantomime, or, with a very few exceptions, have almoſt all ceaſed to be ſo.

This remarkable difference of character between the ancient and the modern dances ſeems to be the natural effect of a correſpondent difference in that of the muſic, which has accompanied and directed both the one and the other.

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In modern times we almoſt always dance to inſtrumental muſic, which being itſelf not imitative, the greater part of the dances which it directs, and as it were inſpires, have ceaſed to be ſo. In ancient times, on the contrary, they ſeem to have danced almoſt always to vocal muſic; which being neceſſary and eſſentially imitative, their dances became ſo too. The ancients ſeem to have had little or nothing of what is properly called inſtrumental muſic, or of muſic compoſed not to be ſung by the voice, but to be played upon inſtruments, and both their wind and their ſtringed inſtruments ſeem to have ſerved only as an accompaniment and direction to the voice.

In the country it frequently happens, that a company of young people take a fancy to dance, though they have neither fiddler nor piper to dance to. A lady undertakes to ſing while the reſt of the company dance: in moſt caſes ſhe ſings the notes only, without the words, and then the voice being little more than a muſical inſtrument, the dance is performed in the uſual way, without any imitation. But if ſhe ſings the words, and if in thoſe words there happens to be ſomewhat more than ordinary ſpirit and humour, immediately all the company, eſpecially all the beſt dancers, and all thoſe who dance moſt at their eaſe, become more or leſs pantomimes, and

and by their geſtures and motions expreſs, as well as they can, the meaning and ſtory of the ſong. This would be ſtill more the caſe, if the ſame perſon both danced and ſung; a practice very common among the ancients: it requires good lungs and a vigorous conſtitution; but with theſe advantages and long practice, the very higheſt dances may be performed in this manner. I have ſeen a Negro dance to his own ſong, the war-dance of his own country, with ſuch vehemence of action and expreſſion, that the whole company, gentlemen as well as ladies, got up upon chairs and tables, to be as much as poſſible out of the way of his fury. In the Greek language there are two verbs which both ſignify to dance; each of which has its proper derivatives, ſignifying a dance and a dancer. In the greater part of Greek authors, theſe two ſets of words, like all others which are nearly ſynonimous, are frequently confounded, and uſed promiſcuouſly. According to the beſt critics, however, in ſtrict propriety, one of theſe verbs ſignifies to dance and ſing at the ſame time, or to dance to one's own muſic. The other to dance without ſinging, or to dance to the muſic of other people. There is ſaid too to be a correſpondent difference in the ſignification of their reſpective derivatives. In the choruſes of the ancient Greek tragedies, conſiſting ſometimes of more than fifty

PART III. persons, some piped and some sung, but all danced, and danced to their own music.

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☞ [*The following Observations were found among Mr.* SMITH'S *Manuscripts, without any intimation whether they were intended as part of this, or of a different Essay. As they appeared too valuable to be suppressed, the Editors have availed themselves of their connection with the passage referred to in* p. 266, *and have annexed them to this Essay.*]

Of the Affinity between Music, Dancing, and Poetry.

IN the second part of this Essay I have mentioned the connection between the two arts of *Music* and *Dancing*, formed by the *Rhythmus*, as the ancients termed it, or, as we call it, the tune or measure that equally regulates both.

It is not, however, every sort of step, gesture, or motion, of which the correspondence with the tune or measure of Music will constitute a Dance. It must be a step, gesture,

ture, or motion of a particular ſort. In a good opera-actor, not only the modulations and pauſes of his voice, but every motion and geſture, every variation, either in the air of his head or in the attitude of his body, correſpond to the time and meaſure of Muſic. The beſt opera-actor, however, is not, according to the language of any country in Europe, underſtood to dance, yet in the performance of his part, he generally makes uſe of what is called the ſtage ſtep; but even this ſtep is not underſtood to be a dancing ſtep.

Though the eye of the moſt ordinary ſpectator readily diſtinguiſhes between what is called a dancing ſtep and any other ſtep, geſture, or motion, yet it may not perhaps be very eaſy to expreſs what it is which conſtitutes this diſtinction. To aſcertain exactly the preciſe limits at which the one ſpecies begins, and the other ends, or to give an accurate definition of this very frivolous matter, might perhaps require more thought and attention, than the very ſmall importance of the ſubject may ſeem to deſerve. Were I, however, to attempt to do this, I ſhould obſerve, that though in performing any ordinary action—in walking, for example—from the one end of the room to the other, a perſon may ſhow both grace and agility, yet if he betrays the leaſt intention of ſhowing either, he is ſure of offending more or leſs, and we

never fail to accuſe him of ſome degree of vanity and affectation. In the performance of any ſuch ordinary action, every perſon wiſhes to appear to be ſolely occupied about the proper purpoſe of the action: if he means to ſhow either grace or agility, he is careful to conceal that meaning, and he is very ſeldom ſucceſsful in doing ſo: he offends, however, juſt in proportion as he betrays it, and he almoſt always betrays it. In Dancing, on the contrary, every perſon profeſſes, and avows, as it were, the intention of diſplaying ſome degree either of grace or of agility, or of both. The diſplay of one, or other, or both of theſe qualities, is in reality the proper purpoſe of the action; and there can never be any diſagreeable vanity or affectation in following out the proper purpoſe of any action. When we ſay of any particular perſon, that he gives himſelf many affected airs and graces in Dancing, we mean either that he gives himſelf airs and graces which are unſuitable to the nature of the Dance, or that he executes aukwardly, perhaps exaggerates too much, (the moſt common fault in Dancing,) the airs and graces which are ſuitable to it. Every Dance is in reality a ſucceſſion of airs and graces of ſome kind or other, and of airs and graces which, if I may ſay ſo, profeſs themſelves to be ſuch. The ſteps, geſtures, and motions which, as it were, avow the intention of exhibiting

hibiting a ſucceſſion of ſuch airs and graces, are the ſteps, geſtures, and motions which are peculiar to Dancing, and when theſe are performed to the time and meaſure of Muſic, they conſtitute what is properly called a Dance.

But though every ſort of ſtep, geſture, or motion, even though performed to the time and meaſure of Muſic, will not alone make a Dance, yet almoſt any ſort of ſound, provided it is repeated with a diſtinct rhythmus, or according to a diſtinct time and meaſure, though without any variation as to gravity or acuteneſs, will make a ſort of Muſic, no doubt indeed, an imperfect one. Drums, cymbals, and, ſo far as I have obſerved, all other inſtruments of percuſſion, have only one note; this note, however, when repeated with a certain rhythmus, or according to a certain time and meaſure, and ſometimes, in order to mark more diſtinctly that time and meaſure, with ſome little variation as to loudneſs and lowneſs, though without any as to acuteneſs and gravity, does certainly make a ſort of Muſic, which is frequently far from being diſagreeable, and which even ſometimes produces conſiderable effects. The ſimple note of ſuch inſtruments, it is true, is generally a very clear, or what is called a melodious, ſound. It does not however ſeem indiſpenſably neceſſary that it ſhould be ſo. The ſound of the muffled drum, when it beats the dead march,

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is far from being either clear or melodious, and yet it certainly produces a ſpecies of Muſic which is ſometimes affecting. Even in the performance of the moſt humble of all artiſts, of the man who drums upon the table with his fingers, we may ſometimes diſtinguiſh the meaſure, and perhaps a little of the humour, of ſome favourite ſong; and we muſt allow that even he makes ſome ſort of Muſic. Without a proper ſtep and motion, the obſervation of tune alone will not make a Dance; time alone, without tune, will make ſome ſort of Muſic.

That exact obſervation of tune, or of the proper intervals of gravity and acuteneſs, which conſtitutes the great beauty of all perfect Muſic, conſtitutes likewiſe its great difficulty. The time or meaſure of a ſong are ſimple matters, which even a coarſe and unpractiſed ear is capable of diſtinguiſhing and comprehending: but to diſtinguiſh and comprehend all the variations of the tune, and to conceive with preciſion the exact proportion of every note, is what the fineſt and moſt cultivated ear is frequently no more than capable of performing. In the ſinging of the common people we may generally remark a diſtinct enough obſervation of time, but a very imperfect one of tune. To diſcover and to diſtinguiſh with preciſion the proper intervals of tune, muſt have been a work of long experience and much

much obſervation. In the theoretical treatiſes upon Muſic, what the authors have to ſay upon time is commonly diſcuſſed in a ſingle chapter of no great length or difficulty. The theory of tune fills commonly all the reſt of the volume, and has long ago become both an extenſive and an abſtruſe ſcience, which is often but imperfectly comprehended, even by intelligent artiſts. In the firſt rude efforts of uncivilized nations towards ſinging, the niceties of tune could be but little attended to: I have, upon this account, been frequently diſpoſed to doubt of the great antiquity of thoſe national ſongs, which it is pretended have been delivered down from age to age by a ſort of oral tradition, without having been ever noted, or diſtinctly recorded for many ſucceſſive generations. The meaſure, the humour of the ſong, might perhaps have been delivered down in this manner, but it ſeems ſcarcely poſſible that the preciſe notes of the tune ſhould have been ſo preſerved. The method of ſinging ſome of what we reckon our old Scotch ſongs, has undergone great alterations within the compaſs of my memory, and it may have undergone ſtill greater before.

The diſtinction between the ſounds or tones of ſinging and thoſe of ſpeaking ſeems to be of the ſame kind with that between the ſteps, geſtures, and motions of Dancing, and thoſe

of any other ordinary action; though in ſpeaking, a perſon may ſhow a very agreeable tone of voice, yet if he ſeems to intend to ſhow it, if he appears to liſten to the ſound of his own voice, and as it were to tune it into a pleaſing modulation, he never fails to offend, as guilty of a moſt diſagreeable affectation. In ſpeaking, as in every other ordinary action, we expect and require that the ſpeaker ſhould attend only to the proper purpoſe of the action, the clear and diſtinct expreſſion of what he has to ſay. In ſinging, on the contrary, every perſon profeſſes the intention to pleaſe by the tone and cadence of his voice; and he not only appears to be guilty of no diſagreeable affectation in doing ſo, but we expect and require that he ſhould do ſo. To pleaſe by the choice and arrangement of agreeable ſounds is the proper purpoſe of all Muſic, vocal as well as inſtrumental; and we always expect and require, that every perſon ſhould attend to the proper purpoſe of whatever action he is performing. A perſon may appear to ſing, as well as to dance, affectedly; he may endeavour to pleaſe by ſounds and tones which are unſuitable to the nature of the ſong, or he may dwell too much on thoſe which are ſuitable to it, or in ſome other way he may ſhow an overweening conceit of his own abilities, beyond what ſeems to be warranted by his performance. The diſagreeable affectation appears

appears to conſiſt always, not in attempting to pleaſe by a proper, but by ſome improper modulation of the voice. It was early diſcovered that the vibrations of chords or ſtrings, which either in their lengths, or in their denſities, or in their degrees of tenſion, bear a certain proportion to one another, produce ſounds which correſpond exactly, or, as the muſicians ſay, are the uniſons of thoſe ſounds or tones of the human voice which the ear approves of in ſinging. This diſcovery has enabled muſicians to ſpeak with diſtinctneſs and preciſion concerning the muſical ſounds or tones of the human voice; they can always preciſely aſcertain what are the particular ſounds or tones which they mean, by aſcertaining what are the proportions of the ſtrings of which the vibrations produce the uniſons of thoſe ſounds or tones. What are called the intervals; that is, the differences, in point of gravity and acuteneſs, between the ſounds or tones of a ſinging voice, are much greater and more diſtinct than thoſe of the ſpeaking voice. Though the former, therefore, can be meaſured and appreciated by the proportions of chords or ſtrings, the latter cannot. The niceſt inſtruments cannot expreſs the extreme minuteneſs of theſe intervals. The heptamerede of Mr. *Sauveur* could expreſs an interval ſo ſmall as the ſeventh part of what is called a comma, the ſmalleſt interval that is admitted in modern Muſic.

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Yet even this inſtrument, we are informed by Mr. *Duclos*, could not expreſs the minuteneſs of the intervals in the pronunciation of the Chineſe language; of all the languages in the world, that of which the pronunciation is ſaid to approach the neareſt to ſinging, or in which the intervals are ſaid to be the greateſt.

As the ſounds or tones of the ſinging voice, therefore, can be aſcertained or appropriated, while thoſe of the ſpeaking voice cannot; the the former are capable of being noted or recorded, while the latter are not.

OF

THE AFFINITY

BETWEEN CERTAIN

ENGLISH AND ITALIAN VERSES.

OF CERTAIN

ENGLISH AND ITALIAN VERSES.

THE meaſure of the verſes, of which the octave of the Italians, their terzetti, and the greater part of their ſonnets, are compoſed, ſeems to be as nearly the ſame with that of the Engliſh Heroic Rhyme, as the different genius and pronunciation of the two languages will permit.

The Engliſh Heroic Rhyme is ſuppoſed to conſiſt ſometimes of ten, and ſometimes of eleven ſyllables: of ten, when the verſe ends with a ſingle, and of eleven, when it ends with a double rhyme.

The correſpondent Italian verſe is ſuppoſed to conſiſt ſometimes of ten, ſometimes of eleven, and ſometimes of twelve ſyllables, according as it happens to end with a ſingle, a double, or a triple rhyme.

The rhyme ought naturally to fall upon the laſt ſyllable of the verſe; it is proper likewiſe that it ſhould fall upon an accented ſyllable, in order to render it more ſenſible. When, therefore, the accent happens to fall, not upon

the laſt ſyllable, but upon that immediately before it, the rhyme muſt fall both upon the accented ſyllable and upon that which is not accented. It muſt be a double rhyme.

In the Italian language, when the accent falls neither upon the laſt ſyllable, nor upon that immediately before it, but upon the third ſyllable from the end, the rhyme muſt fall upon all the three. It muſt be a triple rhyme, and the verſe is ſuppoſed to conſiſt of twelve ſyllables:

Forsè era ver, non però credibile, &c.

Triple rhymes are not admitted into Engliſh Heroic Verſe.

In the Italian language the accent falls much more rarely, either upon the third ſyllable, from the end of a word, or upon the laſt ſyllable, than it does upon the one immediately before the laſt. In reality, this ſecond ſyllable from the end ſeems, in that language, to be its moſt common and natural place. The Italian Heroic Poetry, therefore, is compoſed principally of double rhymes, or of verſes ſuppoſed to conſiſt of eleven ſyllables. Triple rhymes occur but ſeldom, and ſingle rhymes ſtill more ſeldom.

In the Engliſh language the accent falls frequently upon the laſt ſyllable of the word. Our language, beſides, abounds in words of one ſyllable, the greater part of which do

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(for there are few which do not) admit of being accented. Words of one ſyllable are moſt frequently the concluding words of Engliſh rhymes. For both theſe reaſons, Engliſh Heroic Rhyme is principally compoſed of ſingle rhymes, or of verſes ſuppoſed to conſiſt of ten ſyllables. Double Rhymes occur almoſt as rarely in it, as either ſingle or triple do in the Italian.

The rarity of double rhymes in Engliſh Heroic Verſe makes them appear odd, and aukward, and even ludicrous, when they occur. By the beſt writers, therefore, they are reſerved for light and ludicrous occaſions; when, in order to humour their ſubject, they ſtoop to a more familiar ſtyle than uſual. When Mr. Pope ſays;

> Worth makes the man, and want of it the fellow;
> The reſt is all but leather or prunello;

he means, in compliance with his ſubject, to condeſcend a good deal below the ſtatelineſs of his diction in the Eſſay on Man. Double rhymes abound more in Dryden than in Pope, and in Hudibras more than in Dryden.

The rarity both of ſingle and of triple rhyme in Italian Heroic Verſe, gives them the ſame odd and ludicrous air which double rhymes have in Engliſh Verſe. In Italian, triple rhymes occur more frequently than ſingle rhymes. The ſlippery, or if I may be allowed to uſe a very low, but a very expreſ-

ſlvé word, the glib pronunciation of the triple rhyme (*verſo ſotrucciolo*) ſeems to depart leſs from the ordinary movement of the double rhyme, than the abrupt ending of the ſingle rhyme (*verſo tronco e cadente*) of the verſe that appears to be cut off, and to fall ſhort of the uſual meaſure. Single rhymes accordingly appear in Italian verſe much more burleſque than triple rhymes. Single rhymes occur very rarely in Arioſto; but frequently in the more burleſque poem of Ricciardetto. Triple rhymes occur much oftener in all the beſt writers. It is thus, that what in Engliſh appears to be the verſe of the greateſt gravity and dignity, appears in Italian to be the moſt burleſque and ludicrous; for no other reaſon, I apprehend, but becauſe in the one language it is the ordinary verſe, whereas in the other it departs the moſt from the movement of the ordinary verſe.

The common Italian Heroic Poetry being compoſed of double rhymes, it can admit both of ſingle and of triple rhymes; which ſeem to recede from the common movement on oppoſite ſides to nearly equal diſtances. The common Engliſh Heroic Poetry, conſiſting of ſingle rhymes, it can admit of double; but it cannot admit of triple rhymes, which would recede ſo far from the common movements as to appear perfectly burleſque and ridiculous. In Engliſh, when a word accented

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upon the third ſyllable from the end happens to make the laſt word of a verſe, the rhyme falls upon the laſt ſyllable only. It is a ſingle rhyme, and the verſe conſiſts of no more than ten ſyllables: but as the laſt ſyllable is not accented, it is an imperfect rhyme, which, however, when confined to the ſecond verſe of the couplet, and even there introduced but rarely, may have a very agreeable grace, and the line may even ſeem to run more eaſy and natural by means of it;

> Bùt of this frame, the bearings, and the tìes,
> The ſtrict connections, nice depèndencies, &c.

When by a well accented ſyllable in the end of the firſt line of a couplet, it has once been clearly aſcertained what the rhyme is to be, a very ſlight alluſion to it, ſuch as can be made by a ſyllable of the ſame termination that is not accented, may often be ſufficient to mark the coincidence in the ſecond line; a word of this kind in the end of the firſt line ſeldom ſucceeds ſo well;

> Th' inhabitants of old Jeruſalem
> Were Jebuſites; the town ſo called from them.

A couplet in which both verſes were terminated in this manner, would be extremely diſagreeable and offenſive.

In counting the ſyllables, even of verſes which to the ear appear ſufficiently correct, a conſiderable indulgence muſt frequently be

given, before they can, in either language, be reduced to the precise number of ten, eleven, or twelve, according to the nature of the rhyme. In the following couplet, for example, there are, strictly speaking, fourteen syllables in the first line, and twelve in the second.

> And many a humourous, many an amorous lay,
> Was sung by many a bard, on many a day.

By the rapidity, however, or, if I may use a very low word a second time, by the glibness of the pronunciation, those fourteen syllables in the first line, and those twelve in the second, appear to take up the time but of ten ordinary syllables. The words *many a*, though they plainly consist of three distinct syllables, or sounds, which are all pronounced successively, or the one after the other, yet pass as but two syllables; as do likewise these words, *humourous* and *amorous*. The words *heaven* and *given*, in the same manner, consist each of them of two syllables, which, how rapidly soever they may be pronounced, cannot be pronounced but successively, or the one after the other. In verse, however, they are considered as consisting but of one syllable each.

In counting the syllables of the Italian Heroic Verse, all greater coalescences must be allowed: three vowels must there frequently be counted as making but one syllable, though they are all pronounced, rapidly indeed,

indeed, but in ſucceſſion, or the one after the other, and though no two of them are ſuppoſed to make a dipththong. In theſe licences too, the Italians ſeem not to be very regular, and the ſame concourſe of vowels which in one place makes but one ſyllable, will in another ſometimes make two. There are even ſome words which in the end of a verſe are conſtantly counted for two ſyllables, but which in any other part of it are never counted for more than one; ſuch as *ſuo*, *tuo*, *ſuoi*, *tuoi*.

Ruſcelli obſerves, that in the Italian Heroic Verſe the accent ought to fall upon the fourth, the ſixth, the eighth, and the tenth ſyllables; and that if it falls upon the third, the fifth, the ſeventh, or the ninth ſyllables, it ſpoils the verſe.

In Engliſh, if the accent falls upon any of the above-mentioned odd ſyllables, it equally ſpoils the verſe.

Bow'd their ſtiff necks, loaden with ſtormy blaſts.

Though a line of Milton has not the ordinary movement of an Engliſh Heroic Verſe, the accent falls upon the third and fifth ſyllables.

In Italian frequently, and in Engliſh ſometimes, an accent is with great grace thrown upon the firſt ſyllable, in which caſe it ſeldom happens that any other ſyllable is accented before the fourth:

Cánto l'armé pietóſe e'l capitáno.
Fírſt in theſe fiélds I trý the ſylvan ſtráins.

Both in Engliſh and in Italian the ſecond ſyllable may be accented with great grace, and it generally is ſo when the firſt ſyllable is not accented:

E in van l'inferno a' lui s'oppoſe; e in vano
S' armó d'Aſia, e di Libia il popol miſto, &c.

Let us, ſince life can little more ſupply
Than juſt to look about us, and to die, &c.

Both in Engliſh and in Italian Verſe, an accent, though it muſt never be miſplaced, may ſometimes be omitted with great grace. In the laſt of the above-quoted Engliſh Verſes there is no accent upon the eighth ſyllable; the conjunction *and* not admitting of any. In the following Italian Verſe there is no accent upon the ſixth ſyllable:

O Muſa, tu, che di caduchi allori, &c.

The prepoſition *di* will as little admit of an accent as the conjunction *and*. In this caſe, however, when the even ſyllable is not accented, neither of the odd ſyllables immediately before or behind it muſt be accented.

Neither in Engliſh nor in Italian can two accents running be omitted.

It muſt be obſerved, that in Italian there are two accents, the grave and the acute: the grave accent is always marked by a ſlight ſtroke over the ſyllable to which it belongs; the acute accent has no mark.

The Engliſh language knows no diſtinction between the grave and the acute accents.

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The ſame author obſerves, that in the Italian Verſe the Pauſe, or what the grammarians call the Ceſura, may with propriety be introduced after either the third, the fourth, the fifth, the ſixth, or the ſeventh ſyllables. The like obſervations have been made by ſeveral different writers upon the Engliſh Heroic Verſe. Dobie admires particularly the verſe in which there are two pauſes; one after the fifth, and another after the ninth ſyllable. The example he gives is from Petrarch:

Nel dolce tempo de la prima etade, &c.

In this verſe, the ſecond pauſe, which he ſays comes after the ninth ſyllable, in reality comes in between the two vowels, which, in the Italian way of counting ſyllables, compoſe the ninth ſyllable. It may be doubtful, therefore, whether this pauſe may not be conſidered as coming after the eighth ſyllable. I do not recollect any good Engliſh Verſe in which the pauſe comes in after the ninth ſyllable. We have many in which it comes in after the eighth:

Yet oft, before his infant eyes, would run, *&c.*

In which verſe there are two pauſes; one after the ſecond, and the other after the eighth ſyllable. I have obſerved many Italian Verſes in which the pauſe comes after the ſecond ſyllable.

Both

Both the Engliſh and the Italian Heroic Verſe, perhaps, are not ſo properly compoſed of a certain number of ſyllables, which vary according to the nature of the rhyme; as of a certain number of intervals, (of five invariably,) each of which is equal in length, or time, to two ordinary diſtinct ſyllables, though it may ſometimes contain more, of which the extraordinary ſhortneſs compenſates the extraordinary number. The cloſe frequently of each of thoſe intervals, but always of every ſecond interval, is marked by a diſtinct accent. This accent may frequently, with great grace, fall upon the beginning of the firſt interval; after which, it cannot, without ſpoiling the verſe, fall any where but upon the cloſe of an interval. The ſyllable or ſyllables which come after the accent that cloſes the fifth interval are never accented. They make no diſtinct interval, but are conſidered as a ſort of excreſcence of the verſe, and are in a manner counted for nothing.

OF THE

EXTERNAL SENSES.

OF THE

EXTERNAL SENSES.

THE Senſes, by which we perceive external objects, are commonly reckoned Five in Number; Seeing, Hearing, Smelling, Taſting, and Touching.

Of theſe, the four firſt mentioned are each of them confined to particular parts or organs of the body; the Senſe of Seeing is confined to the Eyes; that of Hearing to the Ears; that of Smelling to the Noſtrils; and that of Taſting to the Palate. The Senſe of Touching alone ſeems not to be confined to any particular organ, but to be diffuſed through almoſt every part of the body; if we except the hair and the nails of the fingers and toes, I believe through every part of it. I ſhall ſay a few words concerning each of theſe Senſes; beginning with the laſt, proceeding backwards in the oppoſite order to that in which they are commonly enumerated.

Of the Senſe of TOUCHING.

THE objects of Touch always preſent themſelves as preſſing upon, or as reſiſting the particular

ticular part of the body which perceives them, or by which we perceive them. When I lay my hand upon the table, the table preſſes upon my hand, or reſiſts the further motion of my hand, in the ſame manner as my hand preſſes upon the table. But preſſure or reſiſtance neceſſarily ſuppoſes externality in the thing which preſſes or reſiſts. The table could not preſs upon, or reſiſt the further motion of my hand, if it was not external to my hand. I feel it accordingly, as ſomething which is not merely an affection of my hand, but altogether external to and independent of my hand. The agreeable, indifferent, or painful ſenſation of preſſure, according as I happen to preſs hardly or ſoftly, I feel, no doubt, as affections of my hand; but the thing which preſſes and reſiſts I feel as ſomething altogether different from thoſe affections, as external to my hand, and as altogether independent of it.

In moving my hand along the table it ſoon comes, in every direction, to a place where this preſſure or reſiſtance ceaſes. This place we call the boundary, or end of the table; of which the extent and figure are determined by the extent and direction of the lines or ſurfaces which conſtitute this boundary or end.

It is in this manner that a man born blind, or who has loſt his ſight ſo early that he has

no remembrance of vifible objects, may form the moft diftinct idea of the extent and figure of all the different parts of his own body, and of every other tangible object which he has an opportunity of handling and examining. When he lays his hand upon his foot, as his hand feels the preffure or refiftance of his foot, fo his foot feels that of his hand. They are both external to one another, but they are, neither of them, altogether fo external to him. He feels in both, and he naturally confiders them as parts of himfelf, or at leaft as fomething which belongs to him, and which, for his own happinefs and comfort, it is neceffary that he fhould take fome care of.

When he lays his hand upon the table, though his hand feels the preffure of the table, the table does not feel, at leaft he does not know that it feels, the preffure of his hand. He feels it therefore as fomething external, not only to his hand, but to himfelf, as fomething which makes no part of himfelf, and in the ftate and condition of which he has not neceffarily any concern.

When he lays his hand upon the body either of another man, or of any other animal, though he knows, or at leaft may know, that they feel the preffure of his hand as much as he feels that of their body: yet as this feeling is altogether external to him, he frequently gives no attention to it, and at no time takes any

any further concern in it than he is obliged to do by that fellow-feeling which Nature has, for the wiſeſt purpoſes, implanted in man, not only towards all other men, but (though no doubt in a much weaker degree) towards all other animals. Having deſtined him to be the governing animal in this little world, it ſeems to have been her benevolent intention to inſpire him with ſome degree of reſpect, even for the meaneſt and weakeſt of his ſubjects.

This power or quality of reſiſtance we call Solidity; and the thing which poſſeſſes it, the Solid Body or Thing. As we feel it as ſomething altogether external to us, ſo we neceſſarily conceive it as ſomething altogether independent of us. We conſider it, therefore, as what we call a Subſtance, or as a thing that ſubſiſts by itſelf, and independent of any other thing. Solid and ſubſtantial, accordingly, are two words which, in common language, are conſidered either as altogether, or as nearly ſynonimous.

Solidity neceſſarily ſuppoſes ſome degree of extenſion, and that in all the three directions of length, breadth, and thickneſs. All the ſolid bodies, of which we have any experience, have ſome degree of ſuch bulk or magnitude. It ſeems to be eſſential to their nature, and without it, we cannot even conceive how they ſhould be capable of preſſure

or

or reſiſtance; the powers by which they are made known to us, and by which alone they are capable of acting upon our own, and upon all other bodies.

Extenſion, at leaſt any ſenſible extenſion, ſuppoſes diviſibility. The body may be ſo hard, that our ſtrength is not ſufficient to break it: we ſtill ſuppoſe, however, that if a ſufficient force were applied, it might be ſo broken; and, at any rate, we can always, in fancy at leaſt, imagine it to be divided into two or more parts.

Every ſolid and extended body, if it be not infinite, (as the univerſe may be conceived to be,) muſt have ſome ſhape or figure, or be bounded by certain lines and ſurfaces.

Every ſuch body muſt likewiſe be conceived as capable both of motion and of reſt; both of altering its ſituation with regard to other ſurrounding bodies, and of remaining in the ſame ſituation. That bodies of ſmall or moderate bulk, are capable of both motion and reſt we have conſtant experience. Great maſſes, perhaps, are, acccording to the ordinary habits of the imagination, ſuppoſed to be more fitted for reſt than for motion. Provided a ſufficient force could be applied, however, we have no difficulty in conceiving that the greateſt and moſt unwieldy maſſes might be made capable of motion. Philoſo-

phy teaches us, (and by reaſons too to which it is ſcarcely poſſible to refuſe our aſſent,) that the earth itſelf, and bodies much larger than the earth, are not only moveable, but are at all times actually in motion, and continually altering their ſituation, in reſpect to other ſurrounding bodies, with a rapidity that almoſt paſſes all human comprehenſion. In the ſyſtem of the univerſe, at leaſt according to the imperfect notions which we have hitherto been able to attain concerning it, the great difficulty ſeems to be, not to find the moſt enormous maſſes in motion, but to find the ſmalleſt particle of matter that is perfectly at reſt, with regard to all other ſurrounding bodies.

Theſe four qualities, or attributes of extenſion, diviſibility, figure, and mobility, or the capacity of motion or reſt, ſeem neceſſarily involved in the idea or conception of a ſolid ſubſtance. They are, in reality, inſeparable from that idea or conception, and the ſolid ſubſtance cannot poſſibly be conceived to exiſt without them. No other qualities or attributes ſeem to be involved, in the ſame manner, in this our idea or conception of ſolidity. It would, however, be raſh from thence to conclude that the ſolid ſubſtance can, as ſuch, poſſeſs no other qualities or attributes. This very raſh concluſion, notwithſtanding, has been

been not only drawn, but insisted upon, as an axiom of the most indubitable certainty, by philosophers of very eminent reputation.

Of these external and resisting substances, some yield easily, and change their figure, at least in some degree, in consequence of the pressure of our hand: others neither yield nor change their figure, in any respect, in consequence of the utmost pressure which our hand alone is capable of giving them. The former we call soft, the latter hard, bodies. In some bodies the parts are so very easily separable, that they not only yield to a very moderate pressure, but easily receive the pressing body within them, and without much resistance allow it to traverse their extent in every possible direction. These are called Fluid, in contradistinction to those of which the parts not being so easily separable, are upon that account peculiarly called Solid Bodies; as if they possessed, in a more distinct and perceptible manner, the characteristical quality of solidity or the power of resistance. Water, however, (one of the fluids with which we are most familiar,) when confined on all sides, (as in a hollow globe of metal, which is first filled with it, and then sealed hermetically,) has been found to resist pressure as much as the hardest, or what we commonly call the most solid bodies.

Some fluids yield so very easily to the

ſlighteſt preſſure, that upon ordinary occaſions we are ſcarcely ſenſible of their reſiſtance; and are upon that account little diſpoſed to conceive them as bodies, or as things capable of preſſure and reſiſtance. There was a time, as we may learn from Ariſtotle and Lucretius, when it was ſuppoſed to require ſome degree of philoſophy to demonſtrate that air was a real ſolid body, or capable of preſſure and reſiſtance. What, in ancient times, and in vulgar apprehenſions, was ſuppoſed to be doubtful with regard to air, ſtill continues to be ſo with regard to light, of which the rays, however condenſed or concentrated, have never appeared capable of making the ſmalleſt reſiſtance to the motion of other bodies, the characteriſtical power or quality of what are called bodies, or ſolid ſubſtances. Some philoſophers accordingly doubt, and ſome even deny, that light is a material or corporeal ſubſtance.

Though all bodies or ſolid ſubſtances reſiſt, yet all thoſe with which we are acquainted appear to be more or leſs compreſſible, or capable of having, without any diminution in the quantity of their matter, their bulk more or leſs reduced within a ſmaller ſpace than that which they uſually occupy. An experiment of the Florentine academy was ſuppoſed to have demonſtrated that water was abſolutely incomprehenſible. The ſame experiment, however,

however, having been repeated with more care and accuracy, it appears, that water, though it ſtrongly reſiſts compreſſion, is, however, when a ſufficient force is applied, like all other bodies, in ſome degree liable to it. Air, on the contrary, by the application of a very moderate force, is eaſily reducible within a much ſmaller portion of ſpace than that which it uſually occupies. The condenſing engine, and what is founded upon it, the wind-gun, ſufficiently demonſtrate this: and even without the help of ſuch ingenious and expenſive machines, we may eaſily ſatisfy ourſelves of the truth of it, by ſqueezing a full-blown bladder of which the neck is well tied.

The hardneſs or ſoftneſs of bodies, or the greater or ſmaller force with which they reſiſt any change of ſhape, ſeems to depend altogether upon the ſtronger or weaker degree of coheſion with which their parts are mutually attracted to one another. The greater or ſmaller force with which they reſiſt compreſſion may, upon many occaſions, be owing partly to the ſame cauſe: but it may likewiſe be owing to the greater or ſmaller proportion of empty ſpace comprehended within their dimenſions, or intermixed with the ſolid parts which compoſe them. A body which comprehended no empty ſpace within its dimenſions, which, through all its parts, was completely filled with the reſiſting ſubſtance, we

are naturally disposed to conceive as something which would be absolutely incompressible, and which would resist, with unconquerable force, every attempt to reduce it within narrower dimensions. If the solid and resisting substance, without moving out of its place, should admit into the same place another solid and resisting substance, it would from that moment, in our apprehension, cease to be a solid and resisting substance, and would no longer appear to possess that quality, by which alone it is made known to us, and which we therefore consider as constituting its nature and essence, and as altogether inseparable from it. Hence our notion of what has been called impenetrability of matter; or of the absolute impossibility that two solid resisting substances should occupy the same place at the same time.

This doctrine, which is as old as Leucippus, Democritus, and Epicurus, was in the last century revived by Gassendi, and has since been adopted by Newton and the far greater part of his followers. It may at present be considered as the established system, or as the system that is most in fashion, and most approved of by the greater part of the philosophers of Europe. Though it has been opposed by several puzzling arguments, drawn from that species of metaphysics which confounds every thing and explains nothing, it seems

ſeems upon the whole to be the moſt ſimple, the moſt diſtinct, and the moſt comprehenſible account that has yet been given of the phœnomena which are meant to be explained by it. I ſhall only obſerve, that whatever ſyſtem may be adopted concerning the hardneſs or ſoftneſs, the fluidity or ſolidity, the compreſſibility, or incompreſſibility of the reſiſting ſubſtance, the certainty of our diſtinct ſenſe and feeling of its Externality, or of its entire independency upon the organ which perceives it, or by which we perceive it, cannot in the ſmalleſt degree be affected by any ſuch ſyſtem. I ſhall not therefore attempt to give any further account of ſuch ſyſtems.

Heat and cold being felt by almoſt every part of the human body, have commonly been ranked along with ſolidity and reſiſtance, among the qualities which are the objects of Touch. It is not, however, I think, in our language proper to ſay that we touch, but that we feel the qualities of heat and cold. The word *feeling*, though in many caſes we uſe it as ſynonimous to *touching*, has, however, a much more extenſive ſignification, and is frequently employed to denote our internal, as well as our external, affections. We feel hunger and thirſt, we feel joy and ſorrow, we feel love and hatred.

Heat and cold, in reality, though they may frequently be perceived by the ſame parts of

the human body, conſtitute an order of ſenſations altogether different from thoſe which are the proper objects of Touch. They are naturally felt, not as preſſing upon the organ, but as in the organ. What we feel while we ſtand in the ſunſhine during a hot, or in the ſhade during a froſty, day, is evidently felt, not as preſſing upon the body, but as in the body. It does not neceſſarily ſuggeſt the preſence of any external object, nor could we from thence alone infer the exiſtence of any ſuch object. It is a ſenſation which neither does nor can exiſt any where but either in the organ which feels it, or in the unknown principle of perception, whatever that may be, which feels in that organ, or by means of that organ. When we lay our hand upon a table, which is either heated or cooled a good deal beyond the actual temperature of our hand, we have two diſtinct perceptions: firſt, that of the ſolid or reſiſting table, which is neceſſarily felt as ſomething external to, and independent of, the hand which feels it: and ſecondly, that of the heat or cold, which by the contact of the table is excited in our hand, and which is naturally felt as nowhere but in our hand, or in the principle of perception which feels in our hand.

But though the ſenſations of heat and cold do not neceſſarily ſuggeſt the preſence of any external object, we ſoon learn from experience

ence that they are commonly excited by ſome ſuch object: ſometimes by the temperature of ſome external body immediately in contact with our own body, and ſometimes by ſome body at either a moderate or a great diſtance from us; as by the fire in a chamber, or by the ſun in a Summer's day. By the frequency and uniformity of this experience, by the cuſtom and habit of thought which that frequency and uniformity neceſſarily occaſion, the Internal Senſation, and the External Cauſe of that Senſation, come in our conception to be ſo ſtrictly connected, that in our ordinary and careleſs way of thinking, we are apt to conſider them as almoſt one and the ſame thing, and therefore denote them by one and the ſame word. The confuſion, however, is in this caſe more in the word than in the thought; for in reality we ſtill retain ſome notion of the diſtinction, though we do not always evolve it with that accuracy which a very ſlight degree of attention might enable us to do. When we move our hand, for example, along the ſurface of a very hot or of a very cold table, though we ſay that the table is hot or cold in every part of it, we never mean that, in any part of it, it feels the ſenſations either of heat or of cold, but that in every part of it, it poſſeſſes the power of exciting one or other of thoſe ſenſations in our bodies. The philoſophers who have taken ſo much

much pains to prove that there is no heat in the fire, meaning that the ſenſation or feeling of heat is not in the fire, have laboured to refute an opinion which the moſt ignorant of mankind never entertained. But the ſame word being, in common language, employed to ſignify both the ſenſation and the power of exciting that ſenſation, they, without knowing it perhaps, or intending it, have taken advantage of this ambiguity, and have triumphed in their own ſuperiority, when by irreſiſtible arguments they eſtabliſh an opinion which, in words indeed, is diametrically oppoſite to the moſt obvious judgments of mankind, but which in reality is perfectly agreeable to thoſe judgments.

Of the Senſe of Tasting.

When we taſte any ſolid or liquid ſubſtance, we have always two diſtinct perceptions; firſt, that of the ſolid or liquid body, which is naturally felt as preſſing upon, and therefore as external to, and independent of, the organ which feels it; and ſecondly, that of the particular taſte, reliſh, or ſavour which it excites in the palate or organ of Taſting, and which is naturally felt, not as preſſing upon, as external to, or as independent of, that organ; but as altogether in the organ, and nowhere

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but in the organ, or in the principle of perception which feels in that organ. When we ſay that the food which we eat has an agreeable or diſagreeable taſte in every part of it, we do not thereby mean that it has the feeling or ſenſation of taſte in any part of it, but that in every part of it, it has the power of exciting that feeling or ſenſation in our palates. Though in this caſe we denote by the ſame word (in the ſame manner, and for the ſame reaſon, as in the caſe of heat and cold) both the ſenſation and the power of exciting that ſenſation, this ambiguity of language miſleads the natural judgments of mankind in the one caſe as little as in the other. Nobody ever fancies that our food feels its own agreeable or diſagreeable taſte.

Of the Senſe of Smelling.

Every ſmell or odour is naturally felt as in the noſtrils; not as preſſing upon or reſiſting the organ, not as in any reſpect external to, or independent of, the organ, but as altogether in the organ, and nowhere elſe but in the organ, or in the principle of perception which feels in that organ. We ſoon learn from experience, however, that this ſenſation is commonly excited by ſome external body; by a flower, for example, of which the abſence

ſence removes, and the preſence brings back, the ſenſation. This external body we conſider as the cauſe of this ſenſation, and we denominate by the ſame words both the ſenſation and the power by which the external body produces this ſenſation. But when we ſay that the ſmell is in the flower, we do not thereby mean that the flower itſelf has any feeling of the ſenſation which we feel; but that it has the power of exciting this ſenſation in our noſtrils, or in the principle of perception which feels in our noſtrils. Though this ſenſation, and the power by which it is excited, are thus denoted by the ſame word, this ambiguity of language miſleads, in this caſe, the natural judgments of mankind as little as in the two preceding.

Of the Senſe of Hearing.

Every ſound is naturally felt as in the Ear, the organ of Hearing. Sound is not naturally felt as reſiſting or preſſing upon the organ, or as in any reſpect external to, or independent of, the organ. We naturally feel it as an affection of our Ear, as ſomething which is altogether in our Ear, and nowhere but in our Ear, or in the principle of perception which feels in our Ear. We ſoon learn from experience, indeed, that the ſenſation is frequently excited

excited by bodies at a conſiderable diſtance from us; often at a much greater diſtance, than thoſe ever are which excite the ſenſation of Smelling. We learn too from experience that this ſound or ſenſation in our Ears receives different modifications, according to the diſtance and direction of the body which originally cauſes it. The ſenſation is ſtronger, the ſound is louder, when that body is near. The ſenſation is weaker, the ſound is lower, when that body is at a diſtance. The ſound, or ſenſation, too undergoes ſome variation according as the body is placed on the right hand or on the left, before or behind us. In common language we frequently ſay, that the ſound ſeems to come from a great or from a ſmall diſtance, from the right hand or from the left, from before or from behind us. We frequently ſay too that we hear a ſound at a great or ſmall diſtance, on our right hand or on our left. The real ſound, however, the ſenſation in our ear, can never be heard or felt any where but in our ear, it can never change its place, it is incapable of motion, and can come, therefore, neither from the right nor from the left, neither from before nor from behind us. The Ear can feel or hear nowhere but where it is, and cannot ſtretch out its powers of perception, either to a great or to a ſmall diſtance, either to the right or to the left. By all ſuch phraſes we

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in reality mean nothing but to expreſs our opinion concerning either the diſtance, or the direction of the body, which excites the ſenſation of ſound. When we ſay that the ſound is in the bell, we do not mean that the bell hears its own ſound, or that any thing like our ſenſation is in the bell, but that it poſſeſſes the power of exciting that ſenſation in our organ of Hearing. Though in this, as well as in ſome other caſes, we expreſs by the ſame word, both the Senſation, and the Power of exciting that Senſation; this ambiguity of language occaſions ſcarce any confuſion in the thought, and when the different meanings of the word are properly diſtinguiſhed, the opinions of the vulgar, and thoſe of the philoſopher, though apparently oppoſite, turn out to be exactly the ſame.

Theſe four claſſes of ſecondary qualities, as philoſophers have called them, or to ſpeak more properly, theſe four claſſes of Senſations; Heat and Cold, Taſte, Smell, and Sound; being felt, not as reſiſting or preſſing upon the organ; but as in the organ, are not naturally perceived as external and independent ſubſtances; or even as qualities of ſuch ſubſtances; but as mere affections of the organ, and what can exiſt nowhere but in the organ.

They do not poſſeſs, nor can we even conceive them as capable of poſſeſſing, any one of the qualities, which we conſider as eſſential

to, and inſeparable from, the external ſolid and independant ſubſtances.

Firſt, They have no extenſion. They are neither long nor ſhort; they are neither broad nor narrow; they are neither deep nor ſhallow. The bodies which excite them, the ſpaces within which they may be perceived, may poſſeſs any of thoſe dimenſions; but the Senſations themſelves can poſſeſs none of them. When we ſay of a Note in Muſic, that it is long or ſhort, we mean that it is ſo in point of duration. In point of extenſion we cannot even conceive, that it ſhould be either the one or the other.

Secondly, Thoſe Senſations have no figure. They are neither round nor ſquare, though the bodies which excite them, though the ſpaces within which they may be perceived, may be either the one or the other.

Thirdly, Thoſe Senſations are incapable of motion. The bodies which excite them may be moved to a greater or to a ſmaller diſtance. The Senſations become fainter in the one caſe, and ſtronger in the other. Thoſe bodies may change their direction with regard to the organ of Senſation. If the change be conſiderable, the Senſations undergo ſome ſenſible variation in conſequence of it. But ſtill we never aſcribe motion to the Senſations. Even when the perſon who feels any of thoſe Senſations, and conſequently the organ by which

which he feels them, changes his ſituation, we never, even in this caſe, ſay, that the Senſation moves, or is moved. It ſeems to exiſt always, where alone it is capable of exiſting, in the organ which feels it. We never even aſcribe to thoſe Senſations the attribute of reſt; becauſe we never ſay that any thing is at reſt, unleſs we ſuppoſe it capable of motion. We never ſay that any thing does not change its ſituation with regard to other things, unleſs we ſuppoſe it capable of changing that ſituation.

Fourthly, Thoſe Senſations, as they have no extenſion, ſo they can have no diviſibility. We cannot even conceive that a degree of Heat or Cold, that a Smell, a Taſte, or a Sound, ſhould be divided (in the ſame manner as the ſolid and extended ſubſtance may be divided) into two halves, or into four quarters, or into any other number of parts.

But though all theſe Senſations are equally incapable of diviſion; there are three of them, Taſte, Smell, and Sound; which ſeem capable of a certain compoſition and decompoſition. A ſkilful cook will, by his taſte, perhaps, ſometimes diſtinguiſh the different ingredients, which enter into the compoſition of a new ſauce, and of which the ſimple taſtes make up the compound one of the ſauce. A ſkilful perfumer may, perhaps, ſometimes be able to do the ſame thing with regard to a new Scent.

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In a concert of vocal and inſtrumental muſic, an acute and experienced Ear readily diſtinguiſhes all the different ſounds which ſtrike upon it at the ſame time, and which may, therefore, be conſidered as making up one compound ſound.

Is it by nature, or by experience, that we learn to diſtinguiſh between ſimple and compound Senſations of this kind? I am diſpoſed to believe that it is altogether by experience; and that naturally all Taſtes, Smells, and Sounds, which affect the organ of Senſation at the ſame time, are felt as ſimple and uncompounded Senſations. It is altogether by experience, I think, that we learn to obſerve the different affinities and reſemblances which the compound Senſation bears to the different ſimple ones, which compoſe it, and to judge that the different cauſes, which naturally excite thoſe different ſimple Senſations, enter into the compoſition of that cauſe which excites the compounded one.

It is ſufficiently evident that this compoſition and decompoſition is altogether different from that union and ſeparation of parts, which conſtitutes the diviſibility of ſolid extenſion.

The Senſations of Heat and Cold ſeem incapable even of this ſpecies of compoſition and decompoſition. The Senſations of Heat and Cold may be ſtronger at one time and weaker at another. They may differ in degree, but they cannot differ in kind. The

Senſations of Taſte, Smell, and Sound, frequently differ, not only in degree, but in kind. They are not only ſtronger and weaker, but ſome Taſtes are ſweet and ſome bitter; ſome Smells are agreeable, and ſome offenſive; ſome Sounds are acute, and ſome grave; and each of theſe different kinds or qualities too is capable of an immenſe variety of different modifications. It is the combination of ſuch ſimple Senſations, as differ not only in degree but in kind, which conſtitutes the compounded Senſation.

Theſe four claſſes of Senſations, therefore, having none of the qualities which are eſſential to, and inſeparable from, the ſolid, external, and independent ſubſtances which excite them, cannot be qualities or modifications of thoſe ſubſtances. In reality we do not naturally conſider them as ſuch; though in the way in which we expreſs ourſelves on the ſubject, there is frequently a good deal of ambiguity and confuſion. When the different meanings of words, however, are fairly diſtinguiſhed, theſe Senſations are, even by the moſt ignorant and illiterate, underſtood to be, not the qualities, but merely the effects of the ſolid, external, and independent ſubſtances upon the ſenſible and living organ, or upon the principle of perception which feels in that organ.

Philoſophers, however, have not in general ſuppoſed that thoſe exciting bodies produce

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thoſe Senſations immediately, but by the intervention of one, two, or more intermediate cauſes.

In the Senſation of Taſte, for example, though the exciting body preſſes upon the organ of Senſation, this preſſure is not ſuppoſed to be the immediate cauſe of the Senſation of Taſte. Certain juices of the exciting body are ſuppoſed to enter the pores of the palate, and to excite, in the irritable and ſenſible fibres of that organ, certain motions or vibrations, which produce there the Senſation of Taſte. But how thoſe juices ſhould excite ſuch motions, or how ſuch motions ſhould produce, either in the organ, or in the principle of perception which feels in the organ, the Senſation of Taſte; or a Senſation, which not only does not bear the ſmalleſt reſemblance to any motion, but which itſelf ſeems incapable of all motion, no philoſopher has yet attempted, nor probably ever will attempt to explain to us.

The Senſations of Heat and Cold, of Smell and Sound, are frequently excited by bodies at a diſtance, ſometimes at a great diſtance, from the organ which feels them. But it is a very antient and well-eſtabliſhed axiom in metaphyſics, that nothing can act where it is not; and this axiom, it muſt, I think, be acknowledged, is at leaſt perfectly agreeable to our natural and uſual habits of thinking.

The Sun, the great ſource of both Heat and Light, is at an immenſe diſtance from us. His rays, however, (traverſing, with inconceivable rapidity, the immenſity of the intervening regions,) as they convey the Senſation of Light to our eyes, ſo they convey that of Heat to all the ſenſible parts of our body. They even convey the power of exciting that Senſation to all the other bodies that ſurround us. They warm the earth, and air, we ſay; that is, they convey to the earth and the air the power of exciting that Senſation in our bodies. A common fire produces, in the ſame manner, all the ſame effects; though the ſphere of its action is confined within much narrower limits.

The odoriferous body, which is generally too at ſome diſtance from us, is ſuppoſed to act upon our organs by means of certain ſmall particles of matter, called Effluvia, which being ſent forth in all poſſible directions, and drawn into our noſtrils by the inſpiration of breathing, produce there the Senſation of Smell. The minuteneſs of thoſe ſmall particles of matter, however, muſt ſurpaſs all human comprehenſion. Incloſe in a gold box, for a few hours, a ſmall quantity of muſk. Take out the muſk, and clean the box with ſoap and water as carefully as it is poſſible. Nothing can be ſuppoſed to remain in the box, but ſuch effluvia as, having pene-

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trated into its interior pores, may have eſcaped the effects of this cleanſing. The box, however, will retain the ſmell of muſk for many, I do not know for how many years; and theſe effluvia, how minute ſoever we may ſuppoſe them, muſt have had the powers of ſubdividing themſelves, and of emitting other effluvia of the ſame kind, continually, and without any interruption, during ſo long a period. The niceſt balance, however, which human art has been able to invent, will not ſhow the ſmalleſt increaſe of weight in the box immediately after it has been thus carefully cleaned.

The Senſation of Sound is frequently felt at a much greater diſtance from the ſounding, than that of Smell ever is from the odoriferous body. The vibrations of the ſounding body, however, are ſuppoſed to produce certain correſpondent vibrations and pulſes in the ſurrounding atmoſphere, which being propagated in all directions, reach our organ of Hearing, and produce there the Senſation of Sound. There are not many philoſophical doctrines, perhaps, eſtabliſhed upon a more probable foundation, than that of the propagation of Sound by means of the pulſes or vibrations of the air. The experiment of the bell, which, in an exhauſted receiver, produces no ſenſible Sound, would alone render this doctrine ſomewhat more than probable.

But this great probability is ſtill further confirmed by the computations of Sir Iſaac Newton, who has ſhown that, what is called the velocity of Sound, or the time which paſſes between the commencement of the action of the ſounding body, and that of the Senſation in our ear, is perfectly ſuitable to the velocity with which the pulſes and vibrations of an elaſtic fluid of the ſame denſity with the air, are naturally propagated. Dr. Franklin has made objections to this doctrine, but, I think, without ſucceſs.

Such are the intermediate cauſes by which philoſophers have endeavoured to connect the Senſations in our organs, with the diſtant bodies which excite them. How thoſe intermediate cauſes, by the different motions and vibrations which they may be ſuppoſed to excite on our organs, produce there thoſe different Senſations, none of which bear the ſmalleſt reſemblance to vibration or motion of any kind, no philoſopher has yet attempted to explain to us.

Of the Senſe of Seeing.

Dr. Berkley, in his New Theory of Viſion, one of the fineſt examples of philoſophical analyſis that is to be found, either in our own, or in any other language, has explained, ſo very

very diſtinctly, the nature of the objects of Sight: their diſſimilitude to, as well as their correſpondence and connection with thoſe of Touch, that I have ſcarcely any thing to add to what he has already done. It is only in order to render ſome things, which I ſhall have occaſion to ſay hereafter, intelligible to ſuch readers as may not have had an opportunity of ſtudying his book, that I have preſumed to treat of the ſame ſubject, after ſo great a maſter. Whatever I ſhall ſay upon it, if not directly borrowed from him, has at leaſt been ſuggeſted by what he has already ſaid.

That the objects of Sight are not perceived as reſiſting or preſſing upon the organ which perceives them, is ſufficiently obvious. They cannot therefore ſuggeſt, at leaſt in the ſame manner, as the objects of Touch, the externality and independency of their exiſtence.

We are apt, however, to imagine that we ſee objects at a diſtance from us, and that conſequently the externality of their exiſtence is immediately perceived by our ſight. But if we conſider that the diſtance of any object from the eye, is a line turned endways to it; and that this line muſt conſequently appear to it, but as one point; we ſhall be ſenſible that diſtance from the eye cannot be the immediate object of Sight, but that all viſible objects muſt naturally be perceived

as close upon the organ, or more properly, perhaps, like all other Sensations, as in the organ which perceives them. That the objects of Sight are all painted in the bottom of the eye, upon a membrane called the *retina*, pretty much in the same manner as the like objects are painted in a Camera Obscura, is well known to whoever has the slightest tincture of the science of Optics; and the principle of perception, it is probable, originally perceives them, as existing in that part of the organ, and nowhere but in that part of the organ. No optician, accordingly, no person who has ever bestowed any moderate degree of attention upon the nature of Vision, has ever pretended that distance from the eye was the immediate object of Sight. How it is that, by means of our Sight, we learn to judge of such distances, Opticians have endeavoured to explain in several different ways. I shall not, however, at present, stop to examine their systems.

The objects of Touch are solidity, and those modifications of solidity which we consider as essential to it, and inseparable from it; solid extension, figure, divisibility, and mobility.

The objects of Sight are colour, and those modifications of colour which, in the same manner, we consider as essential to it, and inseparable from it; coloured extension, figure, divisib[illegible] m[illegible] When we open our eyes,

eyes, the ſenſible coloured objects, which preſent themſelves to us, muſt all have a certain extenſion, or muſt occupy a certain portion of the viſible ſurface which appears before us. They muſt too have all a certain figure, or muſt be bounded by certain viſible lines, which mark upon that ſurface the extent of their reſpective dimenſions. Every ſenſible portion of this viſible or coloured extenſion muſt be conceived as diviſible, or as ſeparable into two, three, or more parts. Every portion too of this viſible or coloured ſurface muſt be conceived as moveable, or as capable of changing its ſituation, and of aſſuming a different arrangement with regard to the other portions of the ſame ſurface.

Colour, the viſible, bears no reſemblance to ſolidity, the tangible object. A man born blind, or who has loſt his ſight ſo early as to have no remembrance of viſible objects, can form no idea or conception of colour. Touch alone can never help him to it. I have heard, indeed, of ſome perſons who had loſt their ſight after the age of manhood, and who had learned to diſtinguiſh by the touch alone, the different colours of cloths or ſilks, the goods which it happened to be their buſineſs to deal in. The powers by which different bodies excite in the organs of Sight the Senſations of different colours, probably depend upon ſome difference in the nature, configuration,

ration, and arrangement of the parts which compoſe their reſpective ſurfaces. This difference may, to a very nice and delicate touch, make ſome difference in the feeling, ſufficient to enable a perſon, much intereſted in the caſe, to make this diſtinction in ſome degree, though probably in a very imperfect and inaccurate one. 'A man born blind might poſſibly be taught to make the ſame diſtinctions. But though he might thus be able to name the different colours, which thoſe different ſurfaces reflected, though he might thus have ſome imperfect notion of the remote cauſes of the Senſations, he could have no better idea of the Senſations themſelves, than that other blind man, mentioned by Mr. Locke, had, who ſaid that he imagined the Colour of Scarlet reſembled the Sound of a Trumpet. A man born deaf may, in the ſame manner, be taught to ſpeak articulately. He is taught how to ſhape and diſpoſe of his organs, ſo as to pronounce each letter, ſyllable, and word. But ſtill, though he may have ſome imperfect idea of the remote cauſes of the Sounds which he himſelf utters, of the remote cauſes of the Senſations which he himſelf excites in other people; he can have none of thoſe Sounds or Senſations themſelves.

If it were poſſible, in the ſame manner, that a man could be born without the Senſe of Touching, that of Seeing could never alone

ſuggeſt to him the idea of Solidity, or enable him to form any notion of the external and reſiſting ſubſtance. It is probable, however, not only that no man, but that no animal was ever born without the Senſe of Touching, which ſeems eſſential to, and inſeparable from, the nature of animal life and exiſtence. It is unneceſſary, therefore, to throw away any reaſoning, or to hazard any conjectures, about what might be the effects of what I look upon as altogether an impoſſible ſuppoſition. The eye when preſſed upon by any external and ſolid ſubſtance, feels, no doubt, that preſſure and reſiſtance, and ſuggeſts to us (in the ſame manner as every other feeling part of the body) the external and independent exiſtence of that ſolid ſubſtance. But in this caſe, the eye acts, not as the organ of Sight, but as an organ of Touch; for the eye poſſeſſes the Senſe of Touching in common with almoſt all the other parts of the body.

The extenſion, figure, diviſibility, and mobility of Colour, the ſole object of Sight, though, on account of their correſpondence and connection with the extenſion, figure, diviſibility, and mobility of Solidity, they are called by the ſame name, yet ſeem to bear no ſort of reſemblance to their nameſakes. As Colour and Solidity bear no ſort of reſemblance to one another, ſo neither can their

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reſpective modifications. Dr. Berkley very juſtly obſerves, that though we can conceive either a coloured or a ſolid line to be prolonged indefinitely, yet we cannot conceive the one to be added to the other. We cannot, even in imagination, conceive an object of Touch to be prolonged into an object of Sight, or an object of Sight into an object of Touch. The objects of Sight and thoſe of Touch conſtitute two worlds, which, though they have a moſt important correſpondence and connection with one another, bear no ſort of reſemblance to one another. The tangible world, as well as all the different parts which compoſe it, has three dimenſions, Length, Breadth, and Depth. The viſible world, as well as all the different parts which compoſe it, has only two, Length and Breadth. It preſents to us only a plain or ſurface, which, by certain ſhades and combinations of Colour, ſuggeſts and repreſents to us (in the ſame manner as a picture does) certain tangible objects which have no Colour, and which therefore can bear no reſemblance to thoſe ſhades and combinations of Colour. Thoſe ſhades and combinations ſuggeſt thoſe different tangible objects as at different diſtances, according to certain rules of Perſpective, which it is, perhaps, not very eaſy to ſay how it is that we learn, whether by ſome particular inſtinct, or by ſome application of either reaſon

reaſon or experience, which has become ſo perfectly habitual to us, that we are ſcarcely ſenſible when we make uſe of it.

The diſtinctneſs of this Perſpective, the preciſion and accuracy with which, by means of it, we are capable of judging concerning the diſtance of different tangible objects, is greater or leſs, exactly in proportion as this diſtinctneſs, as this preciſion and accuracy are of more or leſs importance to us. We can judge of the diſtance of near objects, of the chairs and tables, for example, in the chamber where we are ſitting, with the moſt perfect preciſion and accuracy; and if in broad daylight we ever ſtumble over any of them, it muſt be, not from any error in the Sight, but from ſome defect in the attention. The preciſion and accuracy of our judgment concerning ſuch near objects are of the utmoſt importance to us, and conſtitute the great advantage which a man who ſees has over one who is unfortunately blind. As the diſtance increaſes, the diſtinctneſs of this Perſpective, the preciſion and accuracy of our judgment gradually diminiſh. Of the tangible objects which are even at the moderate diſtance of one, two, or three miles from the eye, we are frequently at a loſs to determine which is neareſt, and which remoteſt. It is ſeldom of much importance to us to judge with preciſion concerning the ſituation of the tangible objects

objects which are even at this moderate diſtance. As the diſtance increaſes, our judgments become more and more uncertain; and at a very great diſtance, ſuch as that of the fixed ſtars, it becomes altogether uncertain. The moſt preciſe knowledge of the relative ſituation of ſuch objects could be of no other uſe to us than to ſatisfy the moſt unneceſſary curioſity.

The diſtances at which different men can by Sight diſtinguiſh, with ſome degree of preciſion, the ſituation of the tangible objects which the viſible ones repreſent, is very different; and this difference, though it, no doubt, may ſometimes depend upon ſome difference in the original configuration of their eyes, yet ſeems frequently to ariſe altogether from the different cuſtoms and habits which their reſpective occupations have led them to contract. Men of letters, who live much in their cloſets, and have ſeldom occaſion to look at very diſtant objects, are ſeldom far-ſighted. Mariners, on the contrary, almoſt always are; thoſe eſpecially who have made many diſtant voyages, in which they have been the greater part of their time out of ſight of land, and have in day-light been conſtantly looking out towards the horizon for the appearance of ſome ſhip, or of ſome diſtant ſhore. It often aſtoniſhes a land-man to obſerve with what preciſion a ſailor can diſtinguiſh in the Offing,

Offing, not only the appearance of a ſhip, which is altogether inviſible to the land-man, but the number of her maſts, the direction of her courſe, and the rate of her ſailing. If ſhe is a ſhip of his acquaintance, he frequently can tell her name, before the land-man has been able to diſcover even the appearance of a ſhip.

Viſible objects, Colour, and all its different modifications, are in themſelves mere ſhadows or pictures, which ſeem to float, as it were, before the organ of Sight. In themſelves, and independent of their connection with the tangible objects which they repreſent, they are of no importance to us, and can eſſentially neither benefit us nor hurt us. Even while we ſee them we are ſeldom thinking of them. Even when we appear to be looking at them with the greateſt earneſtneſs, our whole attention is frequently employed, not upon them, but upon the tangible objects repreſented by them.

It is becauſe almoſt our whole attention is employed, not upon the viſible and repreſenting, but upon the tangible and repreſented objects, that in our imaginations we are apt to aſcribe to the former a degree of magnitude which does not belong to them, but which belongs altogether to the latter. If you ſhut one eye, and hold immediately before the other a ſmall circle of plain glaſs, of not more than

than half an inch in diameter, you may ſee through that circle the moſt extenſive proſpects; lawns and woods, and arms of the ſea, and diſtant mountains. You are apt to imagine that the Landſcape which is thus preſented to you, that the viſible Picture which you thus ſee, is immenſely great and extenſive. The tangible objects which this viſible Picture repreſents, undoubtedly are ſo. But the viſible Picture which repreſents them can be no greater than the little viſible circle through which you ſee it. If while you are looking through this circle, you could conceive a fairy hand and a fairy pencil to come between your eye and the glaſs, that pencil could delineate upon that little glaſs the outline of all thoſe extenſive lawns and woods, and arms of the ſea, and diſtant mountains, in the full and exact dimenſions with which they are really ſeen by the eye.

Every viſible object which covers from the eye any other viſible object, muſt appear at leaſt as large as that other viſible object. It muſt occupy at leaſt an equal portion of that viſible plain or ſurface which is at that time preſented to the eye. Opticians accordingly tell us, that all the viſible objects which are ſeen under equal angles muſt to the eye appear equally large. But the viſible object, which covers from the eye any other viſible object, muſt neceſſarily be ſeen under angles at leaſt equally

equally large as thoſe under which that other object is ſeen. When I hold up my finger, however, before my eye, it appears to cover the greater part of the viſible chamber in which I am ſitting. It ſhould therefore appear as large as the greater part of that viſible chamber. But becauſe I know that the tangible finger bears but a very ſmall proportion to the greater part of the tangible chamber, I am apt to fancy that the viſible finger bears but a like proportion to the greater part of the viſible chamber. My judgment corrects my eye-ſight, and, in my fancy, reduces the viſible object, which repreſents the little tangible one, below its real viſible dimenſions; and, on the contrary, it augments the viſible object which repreſents the great tangible one a good deal beyond thoſe dimenſions. My attention being generally altogether occupied about the tangible and repreſented, and not at all about the viſible and repreſenting objects, my careleſs fancy beſtows upon the latter a proportion which does not in the leaſt belong to them, but which belongs altogether to the former.

It is becauſe the viſible object which covers any other viſible object muſt always appear at leaſt as large as that other object, that opticians tell us that the ſphere of our viſion appears to the eye always equally large; and that when we hold our hand before our eye in ſuch

a manner that we ſee nothing but the inſide of the hand, we ſtill ſee preciſely the ſame number of viſible points, the ſphere of our viſion is ſtill as completely filled, the retina is as entirely covered with the object which is thus preſented to it, as when we ſurvey the moſt extenſive horizon.

A young gentleman who was born with a cataract upon each of his eyes, was, in one thouſand ſeven hundred and twenty-eight, couched by Mr. Cheſelden, and by that means for the firſt time made to ſee diſtinctly. "At firſt," ſays the operator, "he could bear "but very little ſight, and the things he ſaw "he thought extremely large; but upon ſee-"ing things larger, thoſe firſt ſeen he con-"ceived leſs, never being able to imagine "any lines beyond the bounds he ſaw; the "room he was in, he ſaid, he knew to be "but part of the houſe, yet he could not "conceive that the whole houſe would look "bigger." It was unavoidable that he ſhould at firſt conceive, that no viſible object could be greater, could preſent to his eye a greater number of viſible points, or could more completely fill the comprehenſion of that organ, than the narroweſt ſphere of his viſion. And when that ſphere came to be enlarged, he ſtill could not conceive that the viſible objects which it preſented could be larger than thoſe which he had firſt ſeen. He muſt probably by this time have been in ſome degree habituated

tuated to the connection between viſible and tangible objects, and enabled to conceive that viſible object to be ſmall which repreſented a ſmall tangible object; and that to be great, which repreſented a great one. The great objects did not appear to his ſight greater than the ſmall ones had done before; but the ſmall ones, which, having filled the whole ſphere of his viſion, had before appeared as large as poſſible, being now known to repreſent much ſmaller tangible objects, ſeemed in his conception to grow ſmaller. He had begun now to enploy his attention more about the tangible and repreſented, than about the viſible and repreſenting objects; and he was beginning to aſcribe to the latter, the proportions and dimenſions which properly belonged altogether to the former.

As we frequently aſcribe to the objects of Sight a magnitude and proportion which does not really belong to them, but to the objects of Touch which they repreſent, ſo we likewiſe aſcribe to them a ſteadineſs of appearance, which as little belongs to them, but which they derive altogether from their connection with the ſame objects of Touch. The chair which now ſtands at the farther end of the room, I am apt to imagine, appears to my eye as large as it did when it ſtood cloſe by me, when it was ſeen under angles at leaſt four times larger than thoſe under which it is

ſeen at preſent, and when it muſt have occupied, at leaſt, ſixteen times that portion which it occupies at preſent, of the viſible plain or ſurface which is now before my eyes. But as I know that the magnitude of the tangible and repreſented chair, the principal object of my attention, is the ſame in both ſituations, I aſcribe to the viſible and repreſenting chair (though now reduced to leſs than the ſixteenth part of its former dimenſions) a ſteadineſs of appearance, which certainly belongs not in any reſpect to it, but altogether to the tangible and repreſented one. As we approach to, or retire from, the tangible object which any viſible one repreſents, the viſible object gradually augments in the one caſe, and diminiſhes in the other. To ſpeak accurately, it is not the ſame viſible object which we ſee at different diſtances, but a ſucceſſion of viſible objects, which, though they all reſemble one another, thoſe eſpecially which follow near after one another; yet are all really different and diſtinct. But as we know that the tangible object which they repreſent remains always the ſame, we aſcribe to them too a ſameneſs which belongs altogether to it: and we fancy that we ſee the ſame tree at a mile, at half a mile, and at a few yards diſtance. At thoſe different diſtances, however, the viſible objects are ſo very widely different, that we are ſenſible of a change in their appearance. But ſtill,

ſtill, as the tangible object which they repreſent remains invariably the ſame, we aſcribe a ſort of ſameneſs even to them too.

It has been ſaid, that no man ever ſaw the ſame viſible object twice; and this, though, no doubt, an exaggeration, is, in reality, much leſs ſo than at firſt view it appears to be. Though I am apt to fancy that all the chairs and tables, and other little pieces of furniture in the room where I am ſitting, appear to my eye always the ſame, yet their appearance is in reality continually varying, not only according to every variation in their ſituation and diſtance with regard to where I am ſitting, but according to every, even the moſt inſenſible variation in the altitude of my body, in the movement of my head, or even in that of my eyes. The perſpective neceſſarily varies according to all, even the ſmalleſt of theſe variations; and conſequently the appearance of the objects which that perſpective preſents to me. Obſerve what difficulty a portrait painter finds, in getting the perſon who ſits for his picture to preſent to him preciſely that view of the countenance from which the firſt outline was drawn. The painter is ſcarce ever completely ſatisfied with the ſituation of the face which is preſented to him, and finds that it is ſcarcely ever preciſely the ſame with that from which he rapidly ſketched the firſt outline. He endeavours, as well as he can, to

correct the difference from memory, from fancy, and from a ſort of art of approximation, by which he ſtrives to expreſs as nearly as he can, the ordinary effect of the look, air, and character of the perſon whoſe picture he is drawing. The perſon who draws from a ſtatue, which is altogether immoveable, feels a difficulty, though, no doubt, in a leſs degree, of the ſame kind. It ariſes altogether from the difficulty which he finds in placing his own eye preciſely in the ſame ſituation during the whole time which he employs in completing his drawing. This difficulty is more than doubled upon the painter who draws from a living ſubject. The ſtatue never is the cauſe of any variation or unſteadineſs in its own appearance. The living ſubject frequently is.

The benevolent purpoſe of nature in beſtowing upon us the ſenſe of ſeeing, is evidently to inform us concerning the ſituation and diſtance of the tangible objects which ſurround us. Upon the knowledge of this diſtance and ſituation depends the whole conduct of human life, in the moſt trifling as well as in the moſt important tranſactions. Even animal motion depends upon it; and without it we could neither move, nor even ſit ſtill, with complete ſecurity. The objects of ſight, as Dr. Berkley finely obſerves, conſtitute a ſort of language which the Author of Nature addreſſes

addreſſes to our eyes, and by which he informs us of many things, which it is of the utmoſt importance to us to know. As, in common language, the words or ſounds bear no reſemblance to the things which they denote, ſo, in this other language, the viſible objects bear no ſort of reſemblance to the tangible object which they repreſent, and of whoſe relative ſituation, with regard both to ourſelves and to one another, they inform us.

He acknowledges, however, that though ſcarcely any word be by nature better fitted to expreſs one meaning than any other meaning, yet that certain viſible objects are better fitted than others to repreſent certain tangible objects. A viſible ſquare, for example, is better fitted than a viſible circle to repreſent a tangible ſquare. There is, perhaps, ſtrictly ſpeaking, no ſuch thing as either a viſible cube, or a viſible globe, the objects of ſight being all naturally preſented to the eye as upon one ſurface. But ſtill there are certain combinations of colours which are fitted to repreſent to the eye, both the near and the diſtant, both the advancing and the receding lines, angles, and ſurfaces of the tangible cube; and there are others fitted to repreſent, in the ſame manner, both the near and the receding ſurface of the tangible globe. The combination which repreſents the tangible cube, would not be fit to repreſent the tan-

gible globe; and that which repreſents the tangible globe, would not be fit to repreſent the tangible cube. Though there may, therefore, be no reſemblance between viſible and tangible objects, there ſeems to be ſome affinity or correſpondence between them ſufficient to make each viſible object fitter to repreſent a certain preciſe tangible object than any other tangible object. But the greater part of words ſeem to have no ſort of affinity or correſpondence with the meanings or ideas which they expreſs; and if cuſtom had ſo ordered it, they might with equal propriety have been made uſe of to expreſs any other meanings or ideas.

Dr. Berkley, with that happineſs of illuſtration which ſcarcely ever deſerts him, remarks, that this in reality is no more than what happens in common langage; and that though letters bear no ſort of reſemblance to the words which they denote, yet that the ſame combination of letters which repreſents one word, would not always be fit to repreſent another; and that each word is always beſt repreſented by its own proper combination of letters. The compariſon, however, it muſt be obſerved, is here totally changed. The connection between viſible and tangible objects was firſt illuſtrated by comparing it with that between ſpoken language and the meanings or ideas which ſpoken language ſuggeſts

to

to us; and it is now illuſtrated by the connection between written language and ſpoken language, which is altogether different. Even this ſecond illuſtration, beſides, will not apply perfectly to the caſe. When cuſtom, indeed, has perfectly aſcertained the powers of each letter; when it has aſcertained, for example, that the firſt letter of the alphabet ſhall always repreſent ſuch a ſound, and the ſecond letter ſuch another ſound; each word comes then to be more properly repreſented by one certain combination of written letters or characters, than it could be by any other combination. But ſtill the characters themſelves are altogether arbitrary, and have no ſort of affinity or correſpondence with the articulate ſounds which they denote. The character which marks the firſt letter of the alphabet, for example, if cuſtom had ſo ordered it, might, with perfect propriety, have been made uſe of to expreſs the ſound which we now annex to the ſecond, and the character of the ſecond to expreſs that which we now annex to the firſt. But the viſible characters which repreſent to our eyes the tangible globe, could not ſo well repreſent the tangible cube; nor could thoſe which repreſent the tangible cube, ſo properly repreſent the tangible globe. There is evidently, therefore, a certain affinity and correſpondence between each viſible object and the pre-

ciſe

cife tangible object repreſented by it, much ſuperior to what takes place either between written and ſpoken language, or between ſpoken language and the ideas or meanings which it ſuggeſts. The language which nature addreſſes to our eyes, has evidently a fitneſs of repreſentation, an aptitute for ſignifying the preciſe things which it denotes, much ſuperior to that of any of the artificial languages which human art and ingenuity have ever been able to invent.

That this affinity and correſpondence, however, between viſible and tangible objects could not alone, and without the aſſiſtance of obſervation and experience, teach us, by any effort of reaſon, to infer what was the preciſe tangible object which each viſible one repreſented, if it is not ſufficiently evident from what has been already ſaid, it muſt be completely ſo from the remarks of Mr. Cheſelden upon the young gentleman above-mentioned, whom he had couched for a cataract. "Though we ſay of this gentleman, that he "was blind," obſerves Mr. Cheſelden, "as "we do of all people who have ripe cataracts; "yet they are never ſo blind from that cauſe "but that they can diſcern day from night; "and for the moſt part, in a ſtrong light, "diſtinguiſh black, white, and ſcarlet; but "they cannot perceive the ſhape of any "thing; for the light by which theſe per-

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" ceptions are made, being let in obliquely
" through the aqueous humour, or the ante-
" rior ſurface of the cryſtalline, (by which the
" rays cannot be brought into a focus upon
" the retina,) they can diſcern in no other
" manner than a ſound eye can through a
" glaſs of broken jelly, where a great variety
" of ſurfaces ſo differently refract the light,
" that the ſeveral diſtinct pencils of rays can-
" not be collected by the eye into their proper
" foci; wherefore the ſhape of an object in
" ſuch a caſe cannot be at all diſcerned,
" though the colour may: and thus it was
" with this young gentleman, who, though
" he knew thoſe colours aſunder in a good
" light, yet when he ſaw them after he was
" couched, the faint ideas he had of them
" before were not ſufficient for him to know
" them by afterwards; and therefore he did
" not think them the ſame which he had be-
" fore known by thoſe names." This young gentleman, therefore, had ſome advantage over one who from a ſtate of total blindneſs had been made for the firſt time to ſee. He had ſome imperfect notion of the diſtinction of colours; and he muſt have known that thoſe colours had ſome ſort of connection with the tangible objects which he had been accuſtomed to feel. But had he emerged from total blindneſs, he could have learnt this con-

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nection only from a very long course of observation and experience. How little this advantage availed him, however, we may learn partly from the passages of Mr. Cheselden's narrative, already quoted, and still more from the following:

"When he first saw," says that ingenious operator, "he was so far from making any "judgment about distances, that he thought "all objects whatever touched his eyes (as "he expressed it) as what he felt did his skin; "and thought no objects so agreeable as those "which were smooth and regular, though he "could form no judgment of their shape, "or guess what it was in any object that was "pleasing to him. He knew not the shape "of any thing, nor any one thing from another, however different in shape or magnitude; but upon being told what things "were, whose form he before knew from "feeling, he would carefully observe, that "he might know them again; but having "too many objects to learn at once, he "forgot many of them; and (as he said) at "first learned to know, and again forgot a "thousand things in a day. One particular "only (though it may appear trifling) I will "relate: Having often forgot which was the "cat, and which the dog, he was ashamed to "ask; but catching the cat (which he knew

"by

" by feeling) he was obſerved to look at her
" ſtedfaſtly, and then ſetting her down, ſaid,
" So, puſs! I ſhall know you another time."

When the young gentleman ſaid, that the objects which he ſaw touched his eyes, he certainly could not mean that they preſſed upon or reſiſted his eyes; for the objects of ſight never act upon the organ in any way that reſembles preſſure or reſiſtance. He could mean no more than that they were cloſe upon his eyes, or, to ſpeak more properly, perhaps, that they were in his eyes. A deaf man, who was made all at once to hear, might in the ſame manner naturally enough ſay, that the ſounds which he heard touched his ears, meaning that he felt them as cloſe upon his ears, or, to ſpeak, perhaps, more properly, as in his ears.

Mr. Cheſelden adds afterwards: " We
" thought he ſoon knew what pictures repre-
" ſented which were ſhewed to him, but we
" found afterwards we were miſtaken; for
" about two months after he was couched,
" he diſcovered at once they repreſented
" ſolid bodies, when, to that time, he con-
" ſidered them only as party-coloured planes,
" or ſurfaces diverſified with variety of paints;
" but even then he was no leſs ſurpriſed, ex-
" pecting the pictures would feel like the
" things they repreſented, and was amazed
" when he found thoſe parts, which by their
" light

"light and ſhadow appeared now round and "uneven, felt only flat like the reſt; and "aſked which was the lying ſenſe, feeling or "ſeeing?"

Painting, though, by combinations of light and ſhade, ſimilar to thoſe which Nature makes uſe of in the viſible objects which ſhe preſents to our eyes, it endeavours to imitate thoſe objects; yet it never has been able to equal the perſpective of Nature, or to give to its productions that force and diſtinctneſs of relief and projection which Nature beſtows upon hers. When the young gentleman was juſt beginning to underſtand the ſtrong and diſtinct perſpective of Nature, the faint and feeble perſpective of Painting made no impreſſion upon him, and the picture appeared to him what it really was, a plain ſurface bedaubed with different colours. When he became more familiar with the perſpective of Nature, the inferiority of that of Painting did not hinder him from diſcovering its reſemblance to that of Nature. In the perſpective of Nature, he had always found that the ſituation and diſtance of the tangible and repreſented objects, correſponded exactly to what the viſible and repreſenting ones ſuggeſted to him. He expected to find the ſame thing in the ſimilar, though inferior perſpective of Painting, and was diſappointed when he found that the viſible and tangible objects

had not, in this caſe, their uſual correſpondence.

"In a year after ſeeing," adds Mr. Cheſelden, "the young gentleman being carried upon Epſom-downs, and obſerving a large proſpect, he was exceedingly delighted with it, and called it a new kind of ſeeing." He had now, it is evident, come to underſtand completely the language of Viſion. The viſible objects which this noble proſpect preſented to him did not now appear as touching, or as cloſe upon his eye. They did not now appear of the ſame magnitude with thoſe ſmall objects to which, for ſome time after the operation, he had been accuſtomed, in the little chamber where he was confined. Thoſe new viſible objects at once, and as it were of their own accord, aſſumed both the diſtance and the magnitude of the great tangible objects which they repreſented. He had now, therefore, it would ſeem, become completely maſter of the language of Viſion, and he had become ſo in the courſe of a year; a much ſhorter period than that in which any perſon, arrived at the age of manhood, could completely acquire any foreign language. It would appear too, that he had made very conſiderable progreſs even in the two firſt months. He began at that early period to underſtand even the feeble perſpective of Painting; and though at firſt he could not

not diſtinguiſh it from the ſtrong perſpective of Nature, yet he could not have been thus impoſed upon by ſo imperfect an imitation, if the great principles of Viſion had not beforehand been deeply impreſſed upon his mind, and if he had not, either by the aſſociation of ideas, or by ſome other unknown principle, been ſtrongly determined to expect certain tangible objects in conſequence of the viſible ones which had been preſented to him. This rapid progreſs, however, may, perhaps, be accounted for from that fitneſs of repreſentation, which has already been taken notice of, between viſible and tangible objects. In this language of Nature, it may be ſaid, the analogies are more perfect; the etymologies, the declenſions, and conjugations, if one may ſay ſo, are more regular than thoſe of any human language. The rules are fewer, and thoſe rules admit of no exceptions.

But though it may have been altogether by the ſlow paces of obſervation and experience that this young gentleman acquired the knowledge of the connection between viſible and tangible objects; we cannot from thence with certainty infer, that young children have not ſome inſtinctive perception of the ſame kind. In him this inſtinctive power, not having been exerted at the proper ſeaſon, may, from diſuſe, have gone gradually to decay, and at laſt have been completely obliterated. Or, perhaps,

haps, (what ſeems likewiſe very poſſible,) ſome feeble and unobſerved remains of it may have ſomewhat facilitated his acquiſition of what he might otherwiſe have found it much more difficult to acquire.

That, antecedent to all experience, the young of at leaſt the greater part of animals poſſeſs ſome inſtinctive perception of this kind, ſeems abundantly evident. The hen never feeds her young by dropping the food into their bills, as the linnet and the thruſh feed theirs. Almoſt as ſoon as her chickens are hatched, ſhe does not feed them, but carries them to the field to feed, where they walk about at their eaſe, it would ſeem, and appear to have the moſt diſtinct perception of all the tangible objects which ſurround them. We may often ſee them, accordingly, by the ſtraighteſt road, run to and pick up any little grains which ſhe ſhews them, even at the diſtance of ſeveral yards; and they no ſooner come into the light than they ſeem to underſtand this language of Viſion as well as they ever do afterwards. The young of the partridge and of the grouſe ſeem to have, at the ſame early period, the moſt diſtinct perceptions of the ſame kind. The young partridge, almoſt as ſoon as it comes from the ſhell, runs about among long graſs and corn; the young grouſe among long heath, and would both moſt eſſentially hurt themſelves if they had

not the moſt acute, as well as diſtinct perception of the tangible objects which not only ſurround them but preſs upon them on all ſides. This is the caſe too with the young of the gooſe, of the duck, and, ſo far as I have been able to obſerve, with thoſe of at leaſt the greater part of the birds which make their neſts upon the ground, with the greater part of thoſe which are ranked by Linnæus in the orders of the hen and the gooſe, and of many of thoſe long-ſhanked and wading birds which he places in the order that he diſtinguiſhes by the name of Grallæ.

The young of thoſe birds that build their neſts in buſhes, upon trees, in the holes and crevices of high walls, upon high rocks and precipices, and other places of difficult acceſs; of the greater part of thoſe ranked by Linnæus in the orders of the hawk, the magpie, and the ſparrow, ſeem to come blind from the ſhell, and to continue ſo for at leaſt ſome days thereafter. Till they are able to fly they are fed by the joint labour of both parents. As ſoon as that period arrives, however, and probably for ſome time before, they evidently enjoy all the powers of Viſion in the moſt complete perfection, and can diſtinguiſh with moſt exact preciſion the ſhape and proportion of the tangible objects which every viſible one repreſents. In ſo ſhort a period they cannot be ſuppoſed to have acquired thoſe powers from

experience, and muſt therefore derive them from ſome inſtinctive ſuggeſtion. The ſight of birds ſeems to be both more prompt and more acute than that of any other animals. Without hurting themſelves they dart into the thickeſt and moſt thorny buſhes, fly with the utmoſt rapidity through the moſt intricate foreſts, and while they are ſoaring aloft in the air, diſcover upon the ground the little inſects and grains upon which they feed.

The young of ſeveral ſorts of quadrupeds ſeem, like thoſe of the greater part of birds which make their neſts upon the ground, to enjoy as ſoon as they come into the world the faculty of ſeeing as completely as they ever do afterwards. The day, or the day after they are dropt, the calf follows the cow, and the foal the mare, to the field; and though from timidity they ſeldom remove far from the mother, yet they ſeem to walk about at their eaſe; which they could not do unleſs they could diſtinguiſh, with ſome degree of preciſion, the ſhape and proportion of the tangible objects which each viſible one repreſents. The degree of preciſion, however, with which the horſe is capable of making this diſtinction, ſeems at no period of his life to be very complete. He is at all times apt to ſtartle at many viſible objects, which, if they diſtinctly ſuggeſted to him the real ſhape and proportion of the tangible objects which they

repreſent, could not be the objects of fear; at the trunk or root of an old tree, for example, which happens to be laid by the road ſide, at a great ſtone, or the fragment of a rock which happens to lie near the way where he is going. To reconcile him, even to a ſingle object of this kind, which has once alarmed him, frequently requires ſome ſkill, as well as much patience and good temper, in the rider. Such powers of ſight, however, as Nature has thought proper to render him capable of acquiring, he ſeems to enjoy from the beginning, in as great perfection as he ever does afterwards.

The young of other quadrupeds, like thoſe of the birds which make their neſts in places of difficult acceſs, come blind into the world. Their ſight, however, ſoon opens, and as ſoon as it does ſo, they ſeem to enjoy it in the moſt complete perfection, as we may all obſerve in the puppy and the kitten. The ſame thing, I believe, may be ſaid of all other beaſts of prey, at leaſt of all thoſe concerning which I have been able to collect any diſtinct information. They come blind into the world; but as ſoon as their ſight opens, they appear to enjoy it in the moſt complete perfection.

It ſeems difficult to ſuppoſe that man is the only animal of which the young are not endowed with ſome inſtinctive perception of this kind. The young of the human ſpecies, however,

ever, continue ſo long in a ſtate of entire dependency, they muſt be ſo long carried about in the arms of their mothers or of their nurſes, that ſuch an inſtinctive perception may ſeem leſs neceſſary to them than to any other race of animals. Before it could be of any uſe to them, obſervation and experience may, by the known principle of the aſſociation of ideas, have ſufficiently connected in their young minds each viſible object with the correſponding tangible one which it is fitted to repreſent. Nature, it may be ſaid, never beſtows upon any animal any faculty which is not either neceſſary or uſeful, and an inſtinct of this kind would be altogether uſeleſs to an animal which muſt neceſſarily acquire the knowledge which the inſtinct is given to ſupply, long before that inſtinct could be of any uſe to it. Children, however, appear at ſo very early a period to know the diſtance, the ſhape, and magnitude of the different tangible objects which are preſented to them, that I am diſpoſed to believe that even they may have ſome inſtinctive perception of this kind; though poſſibly in a much weaker degree than the greater part of other animals. A child that is ſcarcely a month old, ſtretches out its hands to feel any little play-thing that is preſented to it. It diſtinguiſhes its nurſe, and the other people who are much about it, from ſtrangers. It clings

to the former, and turns away from the latter. Hold a ſmall looking-glaſs before a child of not more than two or three months old, and it will ſtretch out its little arms behind the glaſs, in order to feel the child which it ſees, and which it imagines is at the back of the glaſs. It is deceived, no doubt; but even this ſort of deception ſufficiently demonſtrates that it has a tolerably diſtinct apprehenſion of the ordinary perſpective of Viſion, which it cannot well have learnt from obſervation and experience.

Do any of our other ſenſes, antecedently to ſuch obſervation and experience, inſtinctively ſuggeſt to us ſome conception of the ſolid and reſiſting ſubſtances which excite their reſpective ſenſations; though theſe ſenſations bear no ſort of reſemblance to thoſe ſubſtances?

The ſenſe of Taſting certainly does not. Before we can feel the ſenſation, the ſolid and reſiſting ſubſtance which excites it muſt be preſſed againſt the organs of Taſte, and muſt conſequently be perceived by them. Antecedently to obſervation and experience, therefore, the ſenſe of Taſting can never be ſaid inſtinctively to ſuggeſt ſome conception of that ſubſtance.

It may, perhaps, be otherwiſe with the ſenſe of Smelling. The young of all ſuckling animals, (of the Mammalia of Linnæus,) whether they are born with ſight or without it,

it, yet as ſoon as they come into the world apply to the nipple of the mother in order to ſuck. In doing this they are evidently directed by the Smell. The Smell appears either to excite the appetite for the proper food, or at leaſt to direct the new-born animal to the place where that food is to be found. It may perhaps do both the one and the other.

That when the ſtomach is empty, the Smell of agreeable food excites and irritates the appetite, is what we all muſt have frequently experienced. But the ſtomach of every new-born animal is neceſſarily empty. While in the womb it is nouriſhed, not by the mouth, but by the navel-ſtring. Children have been born apparently in the moſt perfect health and vigour, and have applied to ſuck in the uſual manner; but immediately, or ſoon after, have thrown up the milk, and in the courſe of a few hours have died vomiting and in convulſions. Upon opening their bodies it has been found that the inteſtinal tube or canal had never been opened or pierced in the whole extent of its length; but, like a ſack, admitted of no paſſage beyond a particular place. It could not have been in any reſpect by the mouth, therefore, but altogether by the navel-ſtring, that ſuch children had been nouriſhed and fed up to the degree of health and vigour in which they were born. Every

animal, while in the womb, ſeems to draw its nouriſhment, more like a vegetable, from the root, than like an animal from the mouth; and that nouriſhment ſeems to be conveyed to all the different parts of the body by tubes and canals in many reſpects different from thoſe which afterwards perform the ſame function. As ſoon as it comes into the world, this new ſet of tubes and canals which the providential care of Nature had for a long time before been gradually preparing, is all at once and inſtantaneouſly opened. They are all empty, and they require to be filled. An uneaſy ſenſation accompanies the one ſituation, and an agreeable one the other. The ſmell of the ſubſtance which is fitted for filling them, increaſes and irritates that uneaſy ſenſation, and produces hunger, or the appetite for food.

But all the appetites which take their origin from a certain ſtate of the body, ſeem to ſuggeſt the means of their own gratification; and, even long before experience, ſome anticipation or preconception of the pleaſure which attends that gratification. In the appetite for ſex, which frequently, I am diſpoſed to believe almoſt always, comes a long time before the age of puberty, this is perfectly and diſtinctly evident. The appetite for food ſuggeſts to the new-born infant the operation of ſucking, the only means by which it can

poſſibly

poſſibly gratify that appetite. It is continually ſucking. It ſucks whatever is preſented to its mouth. It ſucks even when there is nothing preſented to its mouth, and ſome anticipation or preconception of the pleaſure which it is to enjoy in ſucking, ſeems to make it delight in putting its mouth into the ſhape and configuration by which it alone can enjoy that pleaſure. There are other appetites in which the moſt unexperienced imagination produces a ſimilar effect upon the organs which Nature has provided for their gratification.

The ſmell not only excites the appetite, but directs to the object which can alone gratify that appetite. But by ſuggeſting the direction towards that object, the Smell muſt neceſſarily ſuggeſt ſome notion of diſtance and externality, which are neceſſarily involved in the idea of direction; in the idea of the line of motion by which the diſtance can beſt be overcome, and the mouth brought into contact with the unknown ſubſtance which is the object of the appetite. That the Smell ſhould alone ſuggeſt any preconception of the ſhape or magnitude of the external body to which it directs, ſeems not very probable. The ſenſation of Smell ſeems to have no ſort of affinity or correſpondence with ſhape or magnitude; and whatever preconception the infant may have of theſe, (and it may very probably have ſome ſuch preconception,) is likely to be ſuggeſted,

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not ſo much directly by the Smell, and indirectly by the appetite excited by that Smell; as by the principle which teaches the child to mould its mouth into the conformation and action of ſucking, even before it reaches the object to which alone that conformation and action can be uſefully applied.

The Smell, however, as it ſuggeſts the direction by which the external body muſt be approached, muſt ſuggeſt at leaſt ſome vague idea or preconception of the exiſtence of that body; of the thing to which it directs, though not perhaps of the preciſe ſhape and magnitude of that thing. The infant, too, feeling its mouth attracted and drawn as it were towards that external body, muſt conceive the Smell which thus draws and attracts it, as ſomething belonging to or proceeding from that body, or what is afterwards denominated and obſcurely underſtood to be as a ſort of quality or attribute of that body.

The Smell, too, may very probably ſuggeſt ſome even tolerably diſtinct perception of the Taſte of the food to which it directs. The reſpective objects of our different external ſenſes ſeem, indeed, the greater part of them, to bear no ſort of reſemblance to one another. Colour bears no ſort of reſemblance to Solidity, nor to Heat, nor to Cold, nor to Sound, nor to Smell, nor to Taſte. To this general rule, however, there ſeems to be one, and perhaps but one exception. The ſenſations of Smell and

and Taſte ſeem evidently to bear ſome ſort of reſemblance to one another. Smell appears to have been given to us by Nature as the director of Taſte. It announces, as it were, before trial, what is likely to be the Taſte of the food which is ſet before us. Though perceived by a different organ, it ſeems in many caſes to be but a weaker ſenſation nearly of the ſame kind with that of the Taſte which that announces. It is very natural to ſuppoſe, therefore, that the Smell may ſuggeſt to the infant ſome tolerably diſtinct preconception of the Taſte of the food which it announces, and may, even before experience, make its mouth, as we ſay, water for that food.

That numerous diviſion of animals which Linnæus ranks under the claſs of *worms*, have, ſcarcely any of them, any head. They neither ſee nor hear, have neither eyes nor ears; but many of them have the power of ſelf-motion, and appear to move about in ſearch of their food. They can be directed in this ſearch by no other ſenſe than that of Smelling. The moſt accurate microſcopical obſervations, however, have never been able to diſcover in ſuch animals any diſtinct organ of Smell. They have a mouth and a ſtomach, but no noſtrils. The organ of Taſte, it is probable, has in them a ſenſibility of the ſame kind with that which the olfactory nerves have in more perfect animals. They may, as it

it were, taſte at a diſtance, and be attracted to their food by an affection of the ſame organ by which they afterwards enjoy it; and Smell and Taſte may in them be no otherwiſe diſtinguiſhed than as weaker or ſtronger ſenſations derived from the ſame organ.

The ſenſations of Heat and Cold, when excited by the preſſure of ſome body either heated or cooled beyond the actual temperature of our own organs, cannot be ſaid, antecedently to obſervation and experience, inſtinctively to ſuggeſt any conception of the ſolid and reſiſting ſubſtance which excites them. What was ſaid of the ſenſe of Taſte may very properly be ſaid here. Before we can feel thoſe ſenſations, the preſſure of the external body which excites them muſt neceſſarily ſuggeſt, not only ſome conception, but the moſt diſtinct conviction of its own external and independent exiſtence.

It may be otherwiſe, perhaps, when thoſe ſenſations are either of them excited by the temperature of the external air. In a calm day when there is no wind, we ſcarcely perceive the external air as a ſolid body; and the ſenſations of Heat and Cold, it may be thought, are then felt merely as affections of our own body, without any reference to any thing external. Several caſes, however, may be conceived, in which it muſt be allowed, I imagine, that thoſe ſenſations, even when excited

excited in this manner, muſt ſuggeſt ſome vague notion of ſome external thing or ſubſtance which excites them. A new-born animal, which had the power of ſelf-motion, and which felt its body, either agreeably or diſagreeably, more heated or more cooled on the one ſide than on the other, would, I imagine, inſtinctively and antecedently to all obſervation and experience, endeavour to move towards the ſide in which it felt the agreeable, and to withdraw from that in which it felt the diſagreeable ſenſation. But the very deſire of motion ſuppoſes ſome notion or preconception of externality; and the deſire to move towards the ſide of the agreeable, or from that of the diſagreeable ſenſation, ſuppoſes at leaſt ſome vague notion of ſome external thing or place which is the cauſe of thoſe reſpective ſenſations.

The degrees of Heat and Cold which are agreeable, it has been found from experience, are likewiſe healthful; and thoſe which are diſagreeable, unwholeſome. The degree of their unwholeſomeneſs, too, ſeems to be pretty much in proportion to that of their diſagreeableneſs. If either of them is ſo diſagreeable as to be painful, it is generally deſtructive; and that, too, in a very ſhort period of time. Thoſe ſenſations appear to have been given us for the preſervation of our own bodies. They neceſſarily excite the deſire of changing our ſituation

ſituation when it is unwholeſome or deſtructive; and when it is healthy, they allow us, or rather they entice us, to remain in it. But the deſire of changing our ſituation neceſſarily ſuppoſes ſome idea of externality; or of motion into a place different from that in which we actually are; and even the deſire of remaining in the ſame place ſuppoſes ſome idea of at leaſt the poſſibility of changing. Thoſe ſenſations could not well have anſwered the intention of Nature, had they not thus inſtinctively ſuggeſted ſome vague notion of external exiſtence.

That Sound, the object of the ſenſe of Hearing, though perceived itſelf as in the ear, and nowhere but in the ear, may likewiſe, inſtinctively, and antecedently to all obſervation and experience, obſcurely ſuggeſt ſome vague notion of ſome external ſubſtance or thing which excites it, I am much diſpoſed to believe. I acknowledge, however, that I have not been able to recollect any one inſtance in which this ſenſe ſeems ſo diſtinctly to produce this effect, as that of Seeing, that of Smelling, and even that of Heat and Cold, appear to do in ſome particular caſes. Unuſual and unexpected Sound alarms always, and diſpoſes us to look about for ſome external ſubſtance or thing as the cauſe which excites it, or from which it proceeds. Sound, however, conſidered merely as a ſenſation, or

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as an affection of the organ of Hearing, can in moſt caſes neither benefit nor hurt us. It may be agreeable or diſagreeable, but in its own nature it does not ſeem to announce any thing beyond the immediate feeling. It ſhould not therefore excite any alarm. Alarm is always the fear of ſome uncertain evil beyond what is immediately felt, and from ſome unknown and external cauſe. But all animals, and men among the reſt, feel ſome degree of this alarm, ſtart, are rouſed and rendered circumſpect and attentive by unuſual and unexpected Sound. This effect, too, is produced ſo readily and ſo inſtantaneouſly that it bears every mark of an inſtinctive ſuggeſtion of an impreſſion immediately ſtruck by the hand of Nature, which does not wait for any recollection of paſt obſervation and experience. The hare, and all thoſe other timid animals to whom flight is the only defence, are ſuppoſed to poſſeſs the ſenſe of Hearing in the higheſt degree of activeneſs. It ſeems to be the ſenſe in which cowards are very likely to excel.

The three ſenſes of Seeing, Hearing, and Smelling, ſeem to be given to us by Nature, not ſo much in order to inform us concerning the actual ſituation of our bodies, as concerning that of thoſe other external bodies, which, though at ſome diſtance from us, may ſooner or later affect that actual ſituation, and eventually either benefit or hurt us.

ACCOUNT

OF THE

LIFE AND WRITINGS

OF

ADAM SMITH, LL. D.

From the Transactions of the Royal Society of Edinburgh.

[Read by Mr. STEWART, January 21, and March 18, 1793.]

ACCOUNT

OF THE

LIFE AND WRITINGS

OF

ADAM SMITH, LL.D.

SECTION I.

From Mr. Smith's Birth till the publication of the Theory of Moral Sentiments.

SECT. I.

ADAM SMITH, author of the Inquiry into the Nature and Causes of the Wealth of Nations, was the son of Adam Smith, comptroller of the Customs at Kirkaldy*, and of Margaret Douglas, daughter of Mr. Douglas of Strathenry. He was the only child of the marriage, and was born at

* Mr. Smith, the father, was a native of Aberdeenshire, and, in the earlier part of his life, practised at Edinburgh as a writer to the signet. He was afterwards private secretary to the Earl of Loudoun (during the time he held the offices of Principal Secretary of State for Scotland, and of Keeper of the Great Seal), and continued in this situation till 1713 or 1714, when he was appointed comptroller of the Customs at Kirkaldy. He was also clerk to the courts-martial and councils of war for Scotland; an office which he held from 1707 till his death. As it is now seventy years since he died, the accounts I have received of him are very imperfect; but, from the particulars already mentioned, it may be presumed, that he was a man of more than common abilities.

SECT. I. Kirkaldy on the 5th of June 1723, a few months after the death of his father.

His conſtitution during infancy was infirm and ſickly, and required all the tender ſolicitude of his ſurviving parent. She was blamed for treating him with an unlimited indulgence; but it produced no unfavourable effects on his temper or his diſpoſitions:—and he enjoyed the rare ſatisfaction of being able to repay her affection, by every attention that filial gratitude could dictate, during the long period of ſixty years.

An accident which happened to him when he was about three years old, is of too intereſting a nature to be omitted in the account of ſo valuable a life. He had been carried by his mother to Strathenry, on a viſit to his uncle Mr. Douglas, and was one day amuſing himſelf alone at the door of the houſe, when he was ſtolen by a party of that ſet of vagrants who are known in Scotland by the name of tinkers. Luckily he was ſoon miſſed by his uncle, who, hearing that ſome vagrants had paſſed, purſued them, with what aſſiſtance he could find, till he overtook them in Leſlie wood; and was the happy inſtrument of preſerving to the world a genius, which was deſtined, not only to extend the boundaries of ſcience, but to enlighten and reform the commercial policy of Europe.

The ſchool of Kirkaldy, where Mr. Smith received

received the firſt rudiments of his education, was then taught by Mr. David Miller, a teacher, in his day, of conſiderable reputation, and whoſe name deſerves to be recorded, on account of the eminent men whom that very obſcure ſeminary produced while under his direction. Of this number were Mr. Oſwald of Dunikeir*; his brother, Dr. John Oſwald, afterwards Biſhop of Raphoe; and our late excellent colleague, the Reverend Dr. John Dryſdale: all of them nearly contemporary with Mr. Smith, and united with him through life by the cloſeſt ties of friendſhip.—One of his ſchool-fellows is ſtill alive†; and to his kindneſs I am principally indebted for the ſcanty materials which form the firſt part of this narrative.

SECT. I.

Among theſe companions of his earlieſt years, Mr. Smith ſoon attracted notice, by his paſſion for books, and by the extraordinary powers of his memory. The weakneſs of his bodily conſtitution prevented him from partaking in their more active amuſements; but he was much beloved by them on account of his temper, which, though warm, was to an uncommon degree friendly and generous. Even then he was remarkable for thoſe habits which remained with him through life of

* Note (A)

† George Dryſdale, Eſq. of Kirkaldy, brother of the late Dr. Dryſdale.

SECT. I.

ſpeaking to himſelf when alone, and of *abſence* in company.

From the grammar-ſchool of Kirkaldy, he was ſent, in 1737, to the univerſity of Glaſgow, where he remained till 1740, when he went to Baliol college, Oxford, as an exhibitioner* on Snell's foundation.

Dr. Maclaine of the Hague, who was a fellow-ſtudent of Mr. Smith's at Glaſgow, told me ſome years ago, that his favourite purſuits while at that univerſity were mathematics and natural philoſophy; and I remember to have heard my father remind him of a geometrical problem of conſiderable difficulty, about which he was occupied at the time when their acquaintance commenced, and which had been propoſed to him as an exerciſe by the celebrated Dr. Simpſon.

Theſe, however, were certainly not the ſciences in which he was formed to excel; nor did they long divert him from purſuits more

[* As the word *exhibitioner* has miſled a French author, to whoſe critical acquaintance with the Engliſh language I am indebted for a very elegant tranſlation of this memoir, I think it proper to mention, that it is uſed here to denote a ſtudent who enjoys a ſalary to aſſiſt him in carrying on his academical education. "The "word *Exhibition*" (ſays Johnſon) "is much uſed for penſions "allowed to ſcholars at the univerſity."—In the tranſlation above referred to, as well as in the *Notice* prefixed to M. Garnier's tranſlation of the Wealth of Nations, the clauſe in the text is thus rendered: *il entra au college de Baliol à Oxford, en qualité de démonſtrateur de la fondation de Snell.*

With reſpect to Snell's foundation ("the largeſt, perhaps, and moſt liberal in Britain"), ſee the Statiſtical Account of the Univerſity of Glaſgow.]

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congenial to his mind. What Lord Bacon says of Plato may be justly applied to him: "Illum, licet ad rempublicam non accessisset, "tamen naturâ et inclinatione omnino ad res "civiles propensum, vires eo præcipue in-"tendisse; neque de Philosophia Naturali "admodum sollicitum esse; nisi quatenus ad "Philosophi nomen et celebritatem tuendam, "et ad majestatem quandam moralibus et "civilibus doctrinis addendam et aspergen-"dam sufficeret *." The study of human nature in all its branches, more particularly of the political history of mankind, opened a boundless field to his curiosity and ambition; and while it afforded scope to all the various powers of his versatile and comprehensive genius, gratified his ruling passion, of contributing to the happiness and the improvement of society. To this study, diversified at his leisure hours by the less severe occupations of polite literature, he seems to have devoted himself almost entirely from the time of his removal to Oxford; but he still retained, and retained even in advanced years, a recollection of his early acquisitions, which not only added to the splendour of his conversation, but enabled him to exemplify some of his favourite theories concerning the natural progress of the mind in the investigation of truth, by the history of those sciences in which the connec-

SECT. I

* Redargutio Philosophiarum.

SECT. I. tion and ſucceſſion of diſcoveries may be traced with the greateſt advantage. If I am not miſtaken too, the influence of his early taſte for the Greek geometry may be remarked in the elementary clearneſs and fulneſs, bordering ſometimes upon prolixity, with which he frequently ſtates his political reaſonings.—The lectures of the profound and eloquent Dr. Hutcheſon, which he had attended previous to his departure from Glaſgow, and of which he always ſpoke in terms of the warmeſt admiration, had, it may be reaſonably preſumed, a conſiderable effect in directing his talents to their proper objects*.

I have not been able to collect any information with reſpect to that part of his youth which was ſpent in England. I have heard him ſay, that he employed himſelf frequently in the practice of tranſlation, (particularly from the French); with a view to the improvement of his own ſtyle: and he uſed often to expreſs a favourable opinion of the utility of ſuch exerciſes, to all who cultivate the art of compoſition. It is much to be regretted, that none of his juvenile attempts in this way have been preſerved; as the few ſpecimens which his writings contain of his ſkill as a tranſlator, are ſufficient to ſhew the eminence he had attained in a walk of literature, which,

* Note (B.)

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in our country, has been ſo little frequented by men of genius.

It was probably alſo at this period of his life, that he cultivated with the greateſt care the ſtudy of languages. The knowledge he poſſeſſed of theſe, both ancient and modern, was uncommonly extenſive and accurate; and, in him, was ſubſervient, not to a vain parade of taſteleſs erudition, but to a familiar acquaintance with every thing that could illuſtrate the inſtitutions, the manners, and the ideas of different ages and nations. How intimately he had once been converſant with the more ornamental branches of learning; in particular, with the works of the Roman, Greek, French, and Italian poets, appeared ſufficiently from the hold which they kept of his memory, after all the different occupations and inquiries in which his maturer faculties had been employed *. In the Engliſh language, the variety of poetical paſſages which he was not only accuſtomed to refer to occaſionally, but which he was able to repeat with correctneſs, appeared ſurprizing even to thoſe,

* The uncommon degree in which Mr. Smith retained poſſeſſion, even to the cloſe of his life, of different branches of knowledge which he had long ceaſed to cultivate, has been often remarked to me by my learned colleague and friend, Mr. Dalzel, Profeſſor of Greek in this Univerſity.——Mr. Dalzel mentioned particularly the readineſs and correctneſs of Mr. Smith's memory on philological ſubjects, and the acuteneſs and ſkill he diſplayed in various converſations with him on ſome of the *minutiæ* of Greek grammar.

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SECT. I. whose attention had never been directed to more important acquisitions.

After a residence at Oxford of seven years, he returned to Kirkaldy, and lived two years with his mother; engaged in study, but without any fixed plan for his future life. He had been originally destined for the Church of England, and with that view had been sent to Oxford; but not finding the ecclesiastical profession suitable to his taste, he chose to consult, in this instance, his own inclination, in preference to the wishes of his friends; and abandoning at once all the schemes which their prudence had formed for him, he resolved to return to his own country, and to limit his ambition to the uncertain prospect of obtaining, in time, some one of those moderate preferments, to which literary attainments lead in Scotland.

In the year 1748, he fixed his residence at Edinburgh, and during that and the following years, read lectures on rhetoric and belles lettres, under the patronage of Lord Kames. About this time, too, he contracted a very intimate friendship, which continued without interruption till his death, with Mr. Alexander Wedderburn, now Lord Loughborough, and with Mr. William Johnstone, now Mr. Pulteney.

At what particular period his acquaintance with Mr. David Hume commenced, does not appear

appear from any information that I have received; but from ſome papers, now in the poſſeſſion of Mr. Hume's nephew, and which he has been ſo obliging as to allow me to peruſe, their acquaintance ſeems to have grown into friendſhip before the year 1752. It was a friendſhip on both ſides founded on the admiration of genius, and the love of ſimplicity; and, which forms an intereſting circumſtance in the hiſtory of each of theſe eminent men, from the ambition which both have ſhewn to record it to poſterity.

SECT. I.

In 1751, he was elected Profeſſor of Logic in the Univerſity of Glaſgow; and, the year following, he was removed to the Profeſſorſhip of Moral Philoſophy in the ſame Univerſity, upon the death of Mr. Thomas Craigie, the immediate ſucceſſor of Dr. Hutcheſon. In this ſituation he remained thirteen years; a period he uſed frequently to look back to as the moſt uſeful and happy of his life. It was indeed a ſituation in which he was eminently fitted to excel, and in which the daily labours of his profeſſion were conſtantly recalling his attention to his favourite purſuits, and familiarizing his mind to thoſe important ſpeculations he was afterwards to communicate to the world. In this view, though it afforded, in the meantime, but a very narrow ſcene for his ambition, it was probably inſtrumental, in

SECT. I. no inconſiderable degree, to the future eminence of his literary character.

Of Mr. Smith's lectures while a Profeſſor at Glaſgow, no part has been preſerved, excepting what he himſelf publiſhed in the Theory of Moral Sentiments, and in the Wealth of Nations. The Society therefore, I am perſuaded, will liſten with pleaſure to the following ſhort account of them, for which I am indebted to a gentleman who was formerly one of Mr. Smith's pupils, and who continued till his death to be one of his moſt intimate and valued friends*.

"In the Profeſſorſhip of Logic, to which Mr. Smith was appointed on his firſt introduction into this Univerſity, he ſoon ſaw the neceſſity of departing widely from the plan that had been followed by his predeceſſors, and of directing the attention of his pupils to ſtudies of a more intereſting and uſeful nature than the logic and metaphyſics of the ſchools. Accordingly, after exhibiting a general view of the powers of the mind, and explaining ſo much of the ancient logic as was requiſite to gratify curioſity with reſpect to an artificial method of reaſoning, which had once occupied the univerſal attention of the learned, he dedicated all the reſt of his time to the delivery of

[* Mr. Millar, the late celebrated Profeſſor of Law in the Univerſity of Glaſgow.]

a ſyſtem

SECT. I.

a ſyſtem of rhetoric and belles lettres. The beſt method of explaining and illuſtrating the various powers of the human mind, the moſt uſeful part of metaphyſics, ariſes from an examination of the ſeveral ways of communicating our thoughts by ſpeech, and from an attention to the principles of thoſe literary compoſitions which contribute to perſuaſion or entertainment. By theſe arts, every thing that we perceive or feel, every operation of our minds, is expreſſed and delineated in ſuch a manner, that it may be clearly diſtinguiſhed and remembered. There is, at the ſame time, no branch of literature more ſuited to youth at their firſt entrance upon philoſophy than this, which lays hold of their taſte and their feelings.

" It is much to be regretted, that the manuſcript containing Mr. Smith's lectures on this ſubject was deſtroyed before his death. The firſt part, in point of compoſition, was highly finiſhed; and the whole diſcovered ſtrong marks of taſte and original genius. From the permiſſion given to ſtudents of taking notes, many obſervations and opinions contained in theſe lectures have either been detailed in ſeparate diſſertations, or engroſſed in general collections, which have ſince been given to the public. But theſe, as might be expected, have loſt the air of originality and the diſtinctive character which they received from

SECT. I. from their firſt author, and are often obſcured by that multiplicity of common-place matter in which they are ſunk and involved.

" About a year after his appointment to the Profeſſorſhip of Logic, Mr. Smith was elected to the chair of Moral Philoſophy. His courſe of lectures on this ſubject was divided into four parts. The firſt contained Natural Theology; in which he conſidered the proofs of the being and attributes of God, and thoſe principles of the human mind upon which religion is founded. The ſecond comprehended Ethics, ſtrictly ſo called, and conſiſted chiefly of the doctrines which he afterwards publiſhed in his Theory of Moral Sentiments. In the third part, he treated at more length of that branch of morality which relates to *juſtice*, and which, being ſuſceptible of preciſe and accurate rules, is for that reaſon capable of a full and particular explanation.

" Upon this ſubject he followed the plan that ſeems to be ſuggeſted by Monteſquieu; endeavouring to trace the gradual progreſs of juriſprudence, both public and private, from the rudeſt to the moſt refined ages, and to point out the effects of thoſe arts which contribute to ſubſiſtence, and to the accumulation of property, in producing correſpondent improvements or alterations in law and government. This important branch of his labours

labours he alſo intended to give to the public; but his intention, which is mentioned in the conclusion of the Theory of Moral Sentiments, he did not live to fulfil.

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"In the laſt part of his lectures, he examined thoſe political regulations which are founded, not upon the principle of *juſtice* but that of *expediency*, and which are calculated to increaſe the riches, the power, and the proſperity of a State. Under this view, he conſidered the political inſtitutions relating to commerce, to finances, to eccleſiaſtical and military eſtabliſhments. What he delivered on theſe ſubjects contained the ſubſtance of the work he afterwards publiſhed under the title of An Inquiry into the Nature and Cauſes of the Wealth of Nations.

"There was no ſituation in which the abilities of Mr. Smith appeared to greater advantage than as a Profeſſor. In delivering his lectures, he truſted almoſt entirely to extemporary elocution. His manner, though not graceful, was plain and unaffected; and, as he ſeemed to be always intereſted in the ſubject, he never failed to intereſt his hearers. Each diſcourſe conſiſted commonly of ſeveral diſtinct propoſitions, which he ſucceſſively endeavoured to prove and illuſtrate. Theſe propoſitions, when announced in general terms, had, from their extent, not unfrequently ſomething of the air of a paradox.

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SECT. I. In his attempts to explain them, he often appeared, at firſt, not to be ſufficiently poſſeſſed of the ſubject, and ſpoke with ſome heſitation. As he advanced, however, the matter ſeemed to crowd upon him, his manner became warm and animated, and his expreſſion eaſy and fluent. In points ſuſceptible of controverſy, you could eaſily diſcern, that he ſecretly conceived an oppoſition to his opinions, and that he was led upon this account to ſupport them with greater energy and vehemence. By the fulneſs and variety of his illuſtrations, the ſubject gradually ſwelled in his hands, and acquired a dimenſion which, without a tedious repetition of the ſame views, was calculated to ſeize the attention of his audience, and to afford them pleaſure, as well as inſtruction, in following the ſame object, through all the diverſity of ſhades and aſpects in which it was preſented, and afterwards in tracing it backwards to that original propoſition or general truth from which this beautiful train of ſpeculation had proceeded.

" His reputation as a Profeſſor was accordingly raiſed very high, and a multitude of ſtudents from a great diſtance reſorted to the Univerſity, merely upon his account. Thoſe branches of ſcience which he taught became faſhionable at this place, and his opinions were the chief topics of diſcuſſion in clubs and literary ſocieties. Even the ſmall peculiarities

liarities in his pronunciation or manner of ſpeaking, became frequently the objects of imitation." SECT. I.

While Mr. Smith was thus diſtinguiſhing himſelf by his zeal and ability as a public teacher, he was gradually laying the foundation of a more extenſive reputation, by preparing for the preſs his ſyſtem of morals. The firſt edition of this work appeared in 1759, under the title of "The Theory of Moral "Sentiments."

Hitherto Mr. Smith had remained unknown to the world as an author; nor have I heard that he had made a trial of his powers in any anonymous publications, excepting in a periodical work called *The Edinburgh Review*, which was begun in the year 1755, by ſome gentlemen of diſtinguiſhed abilities, but which they were prevented by other engagements from carrying farther than the two firſt numbers. To this work Mr. Smith contributed a review of Dr. Johnſon's Dictionary of the Engliſh Language, and alſo a letter, addreſſed to the editors, containing ſome general obſervations on the ſtate of literature in the different countries of Europe. In the former of theſe papers, he points out ſome defects in Dr. Johnſon's plan, which he cenſures as not ſufficiently grammatical. "The different ſig-"nifications of a word (he obſerves) are "indeed collected; but they are ſeldom di-

SECT. I. "gefted into general claffes, or ranged under "the meaning which the word principally "expreffes: and fufficient care is not taken "to diftinguifh the words apparently fyno-"nymous." To illuftrate this criticifm, he copies from Dr. Johnfon the articles BUT and HUMOUR, and oppofes to them the fame articles digefted agreeably to his own idea. The various fignifications of the word BUT are very nicely and happily difcriminated. The other articles does not feem to have been executed with equal care.

The obfervations on the ftate of learning in Europe are written with ingenuity and elegance; but are chiefly intereffing, as they fhew the attention which the Author had given to the philofophy and literature of the Continent, at a period when they were not much ftudied in this ifland.

In the fame volume with the Theory of Moral Sentiments, Mr. Smith publifhed a Differtation "on the Origin of Languages, "and on the different Genius of thofe which "are original and compounded." The remarks I have to offer on thefe two difcourfes, I fhall, for the fake of diftinctnefs, make the fubject of a feparate fection.

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SECT. II.

Of the Theory of Moral Sentiments, and the Dissertation on the Origin of Language.

SECT. II.

THE science of Ethics has been divided by modern writers into two parts; the one comprehending the theory of Morals, and the other its practical doctrines. The questions about which the former is employed, are chiefly the two following. *First*, By what *principle* of our constitution are we led to form the notion of moral distinctions;—whether by that faculty which, in the other branches of human knowledge, perceives the distinction between truth and falsehood; or by a peculiar power of perception (called by some the Moral Sense) which is *pleased* with one set of qualities, and *displeased* with another? *Secondly*, What is the proper *object* of moral approbation? or, in other words, What is the common quality or qualities belonging to all the different modes of virtue? Is it benevolence; or a rational self-love; or a disposition (resulting from the ascendant of Reason over Passion) to act suitably to the different relations in which we are placed? These two questions seem to exhaust the whole theory of Morals. The scope of the one is to ascertain the origin of our moral ideas; that

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of the other, to refer the phenomena of moral perception to their moſt ſimple and general laws.

The practical doctrines of morality comprehend all thoſe rules of conduct which profeſs to point out the proper ends of human purſuit, and the moſt effectual means of attaining them; to which we may add all thoſe literary compoſitions, whatever be their particular form, which have for their aim to fortify and animate our good diſpoſitions, by delineations of the beauty, of the dignity, or of the utility of Virtue.

I ſhall not inquire at preſent into the juſtneſs of this diviſion. I ſhall only obſerve, that the words Theory and Practice are not, in this inſtance, employed in their uſual acceptations. The theory of Morals does not bear, for example, the ſame relation to the practice of Morals, that the theory of Geometry bears to practical Geometry. In this laſt ſcience, all the practical rules are founded on theoretical principles previouſly eſtabliſhed: but in the former ſcience, the practical rules are obvious to the capacities of all mankind; the theoretical principles form one of the moſt difficult ſubjects of diſcuſſion that have exerciſed the ingenuity of metaphyſicians.

In illuſtrating the doctrines of practical morality, (if we make allowance for ſome unfortunate prejudices produced or encouraged by violent and oppreſſive ſyſtems of policy), the ancients

ancients ſeem to have availed themſelves of every light furniſhed by nature to human reaſon; and indeed thoſe writers who, in later times, have treated the ſubject with the greateſt ſucceſs, are they who have followed moſt cloſely the foot-ſteps of the Greek and the Roman philoſophers. The theoretical queſtion, too, concerning the eſſence of virtue, or the proper *object* of moral approbation, was a favourite topic of diſcuſſion in the ancient ſchools. The queſtion concerning the *principle* of moral approbation, though not entirely of modern origin, has been chiefly agitated ſince the writings of Dr. Cudworth, in oppoſition to thoſe of Mr. Hobbes; and it is this queſtion accordingly (recommended at once by its novelty and difficulty to the curioſity of ſpeculative men), that has produced moſt of the theories which characterize and diſtinguiſh from each other the later ſyſtems of moral philoſophy.

It was the opinion of Dr. Cudworth, and alſo of Dr. Clarke, that moral diſtinctions are perceived by that power of the mind, which diſtinguiſhes truth from falſehood. This ſyſtem it was one great object of Dr. Hutcheſon's philoſophy to refute, and in oppoſition to it, to ſhow that the words Right and Wrong expreſs certain agreeable and diſagreeable qualities in actions, which it is not the province of reaſon but of feeling to perceive; and to that power of perception which renders us

SECT. II. ſuſceptible of pleaſure or of pain from the view of virtue or of vice, he gave the name of the Moral Senſe. His reaſonings upon this ſubject are in the main acquieſced in, both by Mr. Hume and Mr. Smith; but they differ from him in one important particular,—Dr. Hutcheſon plainly ſuppoſing, that the moral ſenſe is a ſimple principle of our conſtitution, of which no account can be given; whereas the other two philoſophers have both attempted to analyze it into other principles more general. Their ſyſtems, however, with reſpect to it are very different from each other. According to Mr. Hume, all the qualities which are denominated virtuous, are uſeful either to ourſelves or to others, and the pleaſure which we derive from the view of them is the pleaſure of utility. Mr. Smith, without rejecting entirely Mr. Hume's doctrine, propoſes another of his own, far more comprehenſive; a doctrine with which he thinks all the moſt celebrated theories of morality invented by his predeceſſors coincide in part, and from ſome partial view of which he apprehends that they have all proceeded.

Of this very ingenious and original theory, I ſhall endeavour to give a ſhort abſtract. To thoſe who are familiarly acquainted with it as it is ſtated by its author, I am aware that the attempt may appear ſuperfluous; but I flatter myſelf that it will not be wholly uſeleſs to ſuch as have not been much converſant in theſe

abſtract

abſtract diſquiſitions, by preſenting to them the leading principles of the ſyſtem in one connected view, without thoſe interruptions of the attention which neceſſarily ariſe from the author's various and happy illuſtrations, and from the many eloquent digreſſions which animate and adorn his compoſition.

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The fundamental principle of Mr. Smith's theory is, that the primary objects of our moral perceptions are the actions of other men; and that our moral judgments with reſpect to our own conduct are only applications to ourſelves of deciſions which we have already paſſed on the conduct of our neighbour. His work accordingly includes two diſtinct inquiries, which, although ſometimes blended together in the execution of his general deſign, it is neceſſary for the reader to diſcriminate carefully from each other, in order to comprehend all the different bearings of the author's argument. The aim of the former inquiry is, to explain in what manner we learn to judge of the conduct of our neighbour; that of the latter, to ſhew how, by applying theſe judgments to ourſelves, we acquire *a ſenſe of duty*, and a feeling of its paramount authority over all our other principles of action.

Our moral judgments, both with reſpect to our own conduct and that of others, include two diſtinct perceptions: *firſt*, A perception of conduct as right or wrong; and, *ſecondly*, A per-

SECT. II. A perception of the merit or demerit of the agent. To that quality of conduct which moralists, in general, express by the word Rectitude, Mr. Smith gives the name of Propriety; and he begins his theory with inquiring in what it consists, and how we are led to form the idea of it. The leading principles of his doctrine on this subject are comprehended in the following propositions.

1. It is from our own experience alone, that we can form any idea of what passes in the mind of another person on any particular occasion; and the only way in which we can form this idea, is by supposing ourselves in the same circumstances with him, and conceiving how we should be affected if we were so situated. It is impossible for us, however, to conceive ourselves placed in any situation, whether agreeable or otherwise, without feeling an effect of the same kind with what would be produced by the situation itself; and of consequence the attention we give at any time to the circumstances of our neighbour, must affect us somewhat in the same manner, although by no means in the same degree, as if these circumstances were our own.

That this imaginary change of place with other men, is the real source of the interest we take in their fortunes, Mr. Smith attempts to prove by various instances. "When we "see a stroke aimed, and just ready to fall "upon the leg or arm of another person, we "naturally

"naturally ſhrink and draw back our own leg "or our own arm; and when it does fall, we "feel it in ſome meaſure, and are hurt by it "as well as the ſufferer. The mob, when they "are gazing at a dancer on the ſlack-rope, "naturally writhe and twiſt and balance their "own bodies, as they ſee him do, and as they "feel that they themſelves muſt do if in his "ſituation." The ſame thing takes place, according to Mr. Smith, in every caſe in which our attention is turned to the condition of our neighbour, "Whatever is the "paſſion which ariſes from any object in the "perſon principally concerned, an analagous "emotion ſprings up, at the thought of his "ſituation, in the breaſt of every attentive "ſpectator. In every paſſion of which the "mind of man is ſuſceptible, the emotions of "the byeſtander always correſpond to what, "by bringing the caſe home to himſelf, he "imagines ſhould be the ſentiments of the "ſufferer."

To this principle of our nature which leads us to enter into the ſituations of other men, and to partake with them in the paſſions which theſe ſituations have a tendency to excite, Mr. Smith gives the name of *ſympathy* or *fellow-feeling*, which two words he employs as ſynonymous. Upon ſome occaſions, he acknowledges, that ſympathy ariſes merely from the view of a certain emotion in another

perſon;

T. perſon; but in general it ariſes, not ſo much from the view of the emotion, as from that of the ſituation which excites it.

2. A ſympathy or fellow-feeling between different perſons is always agreeable to both. When I am in a ſituation which excites any paſſion, it is pleaſant to me to know, that the ſpectators of my ſituation enter with me into all its various circumſtances, and are affected with them in the ſame manner as I am myſelf. On the other hand, it is pleaſant to the ſpectator to obſerve this correſpondence of his emotions with mine.

3. When the ſpectator of another man's ſituation, upon bringing home to himſelf all its various circumſtances, feels himſelf affected in the ſame manner with the perſon principally concerned, he approves of the affection or paſſion of this perſon as juſt and proper, and ſuitable to its object. The exceptions which occur to this obſervation are, according to Mr. Smith, only apparent. "A ſtranger, "for example, paſſes by us in the ſtreet with "all the marks of the deepeſt affliction: and "we are immediately told, that he has juſt "received the news of the death of his father. "It is impoſſible that, in this caſe, we ſhould "not approve of his grief; yet it may often "happen, without any defect of humanity on "our part, that, ſo far from entering into "the violence of his ſorrow, we ſhould

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"ſcarce conceive the firſt movements of concern upon his account. We have learned, however, from experience, that ſuch a miſfortune naturally excites ſuch a degree of ſorrow; and we know, that if we took time to examine his ſituation fully, and in all its parts, we ſhould, without doubt, moſt ſincerely ſympathize with him. It is upon the conſciouſneſs of this conditional ſympathy that our approbation of his ſorrow is founded, even in thoſe caſes in which that ſympathy does not actually take place; and the general rules derived from our preceding experience of what our ſentiments would commonly correſpond with, correct upon this, as upon many other occaſions, the impropriety of our preſent emotions."

By the *propriety* therefore of any affection or paſſion exhibited by another perſon, is to be underſtood its ſuitableneſs to the object which excites it. Of this ſuitableneſs I can judge only from the coincidence of the affection with that which I feel, when I conceive myſelf in the ſame circumſtances; and the perception of this coincidence is the foundation of the ſentiment of *moral approbation.*

4. Although, when we attend to the ſituation of another perſon, and conceive ourſelves to be placed in his circumſtances, an emotion of the ſame kind with that which he feels

SECT II. feels naturally arifes in our own mind, yet this fympathetic emotion bears but a very fmall proportion, in point of degree, to what is felt by the perfon principally concerned. In order, therefore, to obtain the pleafure of mutual fympathy, nature teaches the fpectator to ftrive, as much as he can, to raife his emotion to a level with that which the object would really produce: and, on the other hand, fhe teaches the perfon whofe paffion this object has excited, to bring it down, as much as he can, to a level with that of the fpectator.

5. Upon thefe two different efforts are founded two different fets of virtues. Upon the effort of the fpectator to enter into the fituation of the perfon principally concerned, and to raife his fympathetic emotions to a level with the motions of the actor, are founded the gentle, the amiable virtues; the virtues of candid condefcenfion and indulgent humanity. Upon the effort of the perfon principally concerned to lower his own emotions, fo as to correfpond as nearly as poffible with thofe of the fpectator, are founded the great, the awful, and refpectable virtues; the virtues of felf-denial, of felf-government, of that command of the paffions, which fubjects all the movements of our nature to what our own dignity and honour, and the propriety of our own conduct, require.

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As a farther illuſtration of the foregoing doctrine, Mr. Smith conſiders particularly the degrees of the different paſſions which are conſiſtent with propriety, and endeavours to ſhew, that, in every caſe, it is decent or indecent to expreſs a paſſion ſtrongly, according as mankind are diſpoſed, or not diſpoſed to ſympathize with it. It is unbecoming, for example, to expreſs ſtrongly any of thoſe paſſions which ariſe from a certain condition of the body; becauſe other men, who are not in the ſame condition, cannot be expected to ſympathize with them. It is unbecoming to cry out with bodily pain; becauſe the ſympathy felt by the ſpectator bears no proportion to the acuteneſs of what is felt by the ſufferer. The caſe is ſomewhat ſimilar with thoſe paſſions which take their origin from a particular turn or habit of the imagination.

In the caſe of the unſocial paſſions of hatred and reſentment, the ſympathy of the ſpectator is divided between the perſon who feels the paſſion, and the perſon who is the object of it. "We are concerned for both, and our "fear for what the one may ſuffer damps "our reſentment for what the other has "ſuffered." Hence the imperfect degree in which we ſympathize with ſuch paſſions; and the propriety, when we are under their influence, of moderating their expreſſion to a

SECT. II. much greater degree than is required in the case of any other motions.

The reverse of this takes place with respect to all the social and benevolent affections. The sympathy of the spectator with the person who feels them, coincides with his concern for the person who is the object of them. It is this redoubled sympathy which renders these affections so peculiarly becoming and agreeable.

The selfish emotions of grief and joy, when they are conceived on account of our own private good or bad fortune, hold a sort of middle place between our social and our unsocial passions. They are never so graceful as the one set, nor so odious as the other. Even when excessive, they are never so disagreeable as excessive resentment: because no opposite sympathy can ever interest us against them: and when most suitable to their objects, they are never so agreeable as impartial humanity and just benevolence: because no double sympathy can ever interest us for them.

After these general speculations concerning the propriety of actions, Mr. Smith examines how far the judgments of mankind concerning it are liable to be influenced, in particular cases, by the prosperous or the adverse circumstances of the agent. The scope of his reasoning on this subject is directed to shew

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(in oppofition to the common opinion), that when there is no envy in the cafe, our propenfity to fympathize with joy is much ftronger than our propenfity to fympathize with forrow; and, of confequence, that it is more eafy to obtain the approbation of mankind in profperity than in adverfity. From the fame principle he traces the origin of ambition, or of the defire of rank and pre-eminence; the great object of which paffion is, to attain that fituation which fets a man moft in the view of general fympathy and attention, and gives him an eafy empire over the affections of others.

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HAVING finifhed the analyfis of our fenfe of propriety and of impropriety, Mr. Smith proceeds to confider our fenfe of merit and demerit; which he thinks has alfo a reference, in the firft inftance, not to our own characters, but to the characters of our neighbours. In explaining the origin of this part of our moral conftitution, he avails himfelf of the fame principle of fympathy, into which he refolves the fentiment of moral approbation.

The words *propriety* and *impropriety*, when applied to an affection of the mind, are ufed in this theory (as has been already obferved) to exprefs the fuitablenefs or unfuitablenefs of

SECT. II. preparation, he begins with ſtating *the fact* concerning our conſciouſneſs of merited praiſe or blame; and it muſt be owned, that the firſt aſpect of the fact, as he himſelf ſtates it, appears not very favourable to his principles. That the great object of a wiſe and virtuous man is not to act in ſuch a manner as to obtain the actual approbation of thoſe around him, but to act ſo as to render himſelf the *juſt* and *proper* object of their approbation, and that his ſatisfaction with his own conduct depends much more on the conſciouſneſs of *deſerving* this approbation than from that of really enjoying it, he candidly acknowledges; but ſtill he inſiſts, that although this may ſeem, at firſt view, to intimate the exiſtence of ſome moral faculty which is not borrowed from without, our moral ſentiments have always ſome ſecret reference, either to what are, or to what upon a certain condition would be, or to what we imagine ought to be, the ſentiments of others; and that if it were poſſible, that a human creature could grow up to manhood without any communication with his own ſpecies, he could no more think of his own character, or of the propriety or demerit of his own ſentiments and conduct, than of the beauty or deformity of his own face. There is indeed a tribunal within the breaſt, which is the ſupreme arbiter of all our actions, and which often mortifies us amidſt the applauſe, and ſupports us under

applies, *mutatis mutandis*, to our ſenſe of demerit, or of ill-deſert. SECT. II.

From theſe principles, it is inferred, that the only actions which appear to us deſerving of reward, are actions of a beneficial tendency, proceeding from proper motives; the only actions which ſeem to deſerve puniſhment are actions of a hurtful tendency, proceeding from improper motives. A mere want of beneficence expoſes to no puniſhment; becauſe the mere want of beneficence tends to do no real poſitive evil. A man, on the other hand, who is barely innocent, and contents himſelf with obſerving ſtrictly the laws of juſtice with reſpect to others, can merit only, that his neighbours, in their turn, ſhould obſerve religiouſly the ſame laws with reſpect to him.

Theſe obſervations lead Mr. Smith to anticipate a little the ſubject of the ſecond great diviſion of his work, by a ſhort enquiry into the origin of our ſenſe of juſtice, *as applicable to our own conduct*; and alſo of our ſentiments of remorſe, and of good deſert.

The origin of our ſenſe of juſtice, as well as of all our other moral ſentiments, he accounts for by means of the principle of ſympathy. When I attend only to the feelings of my own breaſt, my own happineſs appears to me of far greater conſequence than that of all the world beſides. But I am conſcious, that, in this exceſſive preference, other men

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cannot poſſibly ſympathize with me, and that to them I appear only one of the crowd, in whom they are no more intereſted than in any other individual. If I wiſh, therefore, to ſecure their ſympathy and approbation (which, according to Mr. Smith, are the objects of the ſtrongeſt deſire of my nature), it is neceſſary for me to regard my happineſs, not in that light in which it appears to myſelf, but in that light in which it appears to mankind in general. If an unprovoked injury is offered to me, I know that ſociety will ſympathize with my reſentment; but if I injure the intereſts of another, who never injured me, merely becauſe they ſtand in the way of my own, I perceive evidently, that ſociety will ſympathize with *his* reſentment, and that I ſhall become the object of general indignation.

When, upon any occaſion, I am led by the violence of paſſion to overlook theſe conſiderations, and, in the caſe of a competition of intereſts, to act according to my own feelings, and not according to thoſe of impartial ſpectators, I never fail to incur the puniſhment of remorſe. When my paſſion is gratified, and I begin to reflect coolly on my conduct, I can no longer enter into the motives from which it proceeded; it appears as improper to me as to the reſt of the world; I lament the effects it has produced; I pity the unhappy ſufferer whom I have injured; and I feel myſelf a juſt object

object of indignation to mankind. "Such," says Mr. Smith, "is the nature of that sentiment which is properly called remorse. It is made up of shame from the sense of the impropriety of past conduct; of grief for the effects of it; of pity for those that suffer by it; and of the dread and terror of punishment from the consciousness of the justly provoked resentment of all rational creatures."

The opposite behaviour of him who, from proper motives, has performed a generous action, inspires, in a similar manner, the opposite sentiment of conscious merit, or of deserved reward.

The foregoing observations contain a general summary of Mr. Smith's principles with respect to the origin of our moral sentiments, in so far at least as they relate to the conduct of others. He acknowledges, at the same time, that the sentiments of which we are conscious, on particular occasions, do not always coincide with these principles; and that they are frequently modified by other considerations, very different from the propriety or impropriety of the affections of the agent, and also from the beneficial or hurtful tendency of these affections. The good or the bad consequences which accidentally follow from an action, and which, as they do not depend on the agent, ought undoubtedly, in

T. point of juſtice, to have no influence on our opinion, either of the propriety or the merit of his conduct, ſcarcely ever fail to influence conſiderably our judgment with reſpect to both; by leading us to form a good or a bad opinion of the prudence with which the action was performed, and by animating our ſenſe of the merit or demerit of his deſign. Theſe facts, however, do not furniſh any objections which are peculiarly applicable to Mr. Smith's theory; for whatever hypotheſis we may adopt with reſpect to the origin of our moral perceptions, all men muſt acknowledge, that, in ſo far as the proſperous or the unproſperous event of an action depends on fortune or accident, it ought neither to increaſe nor to diminiſh our moral approbation or diſapprobation of the agent. And accordingly it has, in all ages of the world, been the complaint of moraliſts, that the actual ſentiments of mankind ſhould ſo often be in oppoſition to this equitable and indiſputable maxim. In examining, therefore, this irregularity of our moral ſentiments, Mr. Smith is to be conſidered, not as obviating an objection peculiar to his own ſyſtem, but as removing a difficulty which is equally connected with every theory on the ſubject which has ever been propoſed. So far as I know, he is the firſt philoſopher who has been fully aware of the importance of the difficulty, and he has indeed treated it

with

with great ability and ſucceſs. The explanation which he gives of it is not warped in the leaſt by any peculiarity in his own ſcheme; and, I muſt own, it appears to me to be the moſt ſolid and valuable improvement he has made in this branch of ſcience. It is impoſſible to give any abſtract of it in a ſketch of this kind; and therefore I muſt content myſelf with remarking, that it conſiſts of three parts. The firſt explains the cauſe of this irregularity of ſentiment; the ſecond, the extent of its influence; and the third, the important purpoſes to which it is ſubſervient. His remarks on the laſt of theſe heads are more particularly ingenious and pleaſing; as their object is to ſhew, in oppoſition to what we ſhould be diſpoſed at firſt to apprehend, that when nature implanted the ſeeds of this irregularity in the human breaſt, her leading intention was, to promote the happineſs and perfection of the ſpecies.

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The remaining part of Mr. Smith's theory is employed in ſhewing, in what manner *our ſenſe of duty* comes to be formed, in conſequence of an application to ourſelves of the judgments we have previouſly paſſed on the conduct of others.

In entering upon this inquiry, which is undoubtedly the moſt important in the work, and for which the foregoing ſpeculations, are, according to Mr. Smith's theory, a neceſſary

under the cenſure of the world; yet ſtill, he contends, that if we inquire into the origin of its inſtitution, we ſhall find, that its juriſdiction is, in a great meaſure, derived from the authority of that very tribunal whoſe deciſions it ſo often and ſo juſtly reverſes. SECT. II.

When we firſt come into the world, we, for ſome time, fondly purſue the impoſſible project of gaining the good-will and approbation of everybody. We ſoon however find, that this univerſal approbation is unattainable; that the moſt equitable conduct muſt frequently thwart the intereſts or the inclinations of particular perſons, who will ſeldom have candour enough to enter into the propriety of our motives, or to ſee that this conduct, how diſagreeable ſoever to them, is perfectly ſuitable to our ſituation. In order to defend ourſelves from ſuch partial judgments, we ſoon learn to ſet up in our own minds, a judge between ourſelves and thoſe we live with. We conceive ourſelves as acting in the preſence of a perſon, who has no particular relation, either to ourſelves, or thoſe whoſe intereſts are affected by our conduct; and we ſtudy to act in ſuch a manner as to obtain the approbation of this ſuppoſed impartial ſpectator. It is only by conſulting him that we can ſee whatever relates to ourſelves in its proper ſhape and dimenſions.

There are two different occaſions, on which

T. we examine our own conduct, and endeavour to view it in the light in which the impartial ſpectator would view it. Firſt, when we are about to act; and, ſecondly, after we have acted. In both caſes, our views are very apt to be partial.

When we are about to act, the eagerneſs of paſſion ſeldom allows us to conſider what we are doing with the candour of an indifferent perſon. When the action is over, and the paſſions which prompted it have ſubſided, although we can undoubtedly enter into the ſentiments of the indifferent ſpectator much more coolly than before, yet it is ſo diſagreeable to us to think ill of ourſelves, that we often purpoſely turn away our view from thoſe circumſtances which might render our judgment unfavourable.—Hence that ſelf-deceit which is the ſource of half the diſorders of human life.

In order to guard ourſelves againſt its deluſions, nature leads us to form inſenſibly, by our continual obſervations upon the conduct of others, certain general rules concerning what is fit and proper either to be done or avoided. Some of their actions ſhock all our natural ſentiments; and when we obſerve other people affected in the ſame manner with ourſelves, we are confirmed in the belief, that our diſapprobation was juſt. We naturally therefore lay it down as a general rule, that

all

all ſuch actions are to be avoided, as tending to render us odious, contemptible, or puniſhable; and we endeavour, by habitual reflection, to fix this general rule in our minds, in order to correct the miſrepreſentations of ſelf-love, if we ſhould ever be called on to act in ſimilar circumſtances. The man of furious reſentment, if he were to liſten to the dictates of that paſſion, would perhaps regard the death of his enemy as but a ſmall compenſation for a trifling wrong. But his obſervations on the conduct of others have taught him how horrible ſuch ſanguinary revenges are; and he has impreſſed it on his mind as an invariable rule, to abſtain from them upon all occaſions. This rule preſerves its authority with him, checks the impetuoſity of his paſſion, and corrects the partial views which ſelf-love ſuggeſts; although, if this had been the firſt time in which he conſidered ſuch an action, he would undoubtedly have determined it to be juſt and proper, and what every impartial ſpectator would approve of.—A regard to ſuch general rules of morality conſtitutes, according to Mr. Smith, what is properly called *the ſenſe of duty*.

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I before hinted, that Mr. Smith does not reject entirely from his ſyſtem that principle of *utility*, of which the perception in any action or character conſtitutes, according to Mr. Hume, the ſentiment of moral approbation,

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tion. That no qualities of the mind are approved of as virtues, but ſuch as are uſeful or agreeable, either to the perſon himſelf or to others, he admits to be a propoſition that holds univerſally; and he alſo admits, that the ſentiment of approbation with which we regard virtue, is enlivened by the perception of this utility, or, as he explains the fact, it is enlivened by our ſympathy with the happineſs of thoſe to whom the utility extends: but ſtill he inſiſts, that it is not the view of this utility which is either the firſt or principal ſource of moral approbation.

To ſum up the whole of his doctrine in a few words. "When we approve of any character or action, the ſentiments which we feel are derived from four different ſources. "Firſt, we ſympathize with the motives of the agent; ſecondly, we enter into the gratitude of thoſe who receive the benefit of his actions; thirdly, we obſerve that his conduct has been agreeable to the general rules by which thoſe two ſympathies generally act; and, laſtly, when we conſider ſuch actions as making a part of a ſyſtem of behaviour which tends to promote the happineſs either of the individual or of ſociety, they appear to derive a beauty from this utility, not unlike that which we aſcribe to any well-contrived machine." Theſe different ſentiments, he thinks, exhauſt completely,

pletely, in every inſtance that can be ſuppoſed, the compound ſentiment of moral approbation. "After deducting, (ſays he,) in "any one particular caſe, all that muſt be "acknowledged to proceed from ſome one "or other of theſe four principles, I ſhould "be glad to know what remains; and I ſhall "freely allow this overplus to be aſcribed to "a moral ſenſe, or to any other peculiar fa-"culty, provided any body will aſcertain "preciſely what this overplus is."

Mr. Smith's opinion concerning the nature of virtue, is involved in his theory concerning the principle of moral approbation. The idea of virtue, he thinks, always implies the idea of propriety, or of the ſuitableneſs of the affection to the object which excites it; which ſuitableneſs, according to him, can be determined in no other way than by the ſympathy of impartial ſpectators with the motives of the agent. But ſtill he apprehends, that this deſcription of virtue is incomplete; for although in every virtuous action propriety is an eſſential ingredient, it is not always the ſole ingredient. Beneficent actions have in them another quality, by which they appear, not only to deſerve approbation, but recompenſe, and excite a ſuperior degree of eſteem, ariſing from a double ſympathy with the motives of the agent, and the gratitude of thoſe who are objects of his affection. In this reſpect, beneficence

T. neficence appears to him to be diſtinguiſhed from the inferior virtues of prudence, vigilance, circumſpection, temperance, conſtancy, firmneſs, which are always regarded with approbation, but which confer no merit. This diſtinction, he apprehends, has not been ſufficiently attended to by moraliſts; the principles of ſome affording no explanation of the approbation we beſtow on the inferior virtues; and thoſe of others accounting as imperfectly for the peculiar excellency which the ſupreme virtue of beneficence is acknowledged to poſſeſs.

Such are the outlines of Mr. Smith's Theory of Moral Sentiments; a work which, whatever opinion we may entertain of the juſtneſs of its concluſions, muſt be allowed by all to be a ſingular effort of invention, ingenuity, and ſubtilty. For my own part, I muſt confeſs, that it does not coincide with my notions concerning the foundation of morals: but I am convinced, at the ſame time, that it contains a large mixture of important truth, and that, although the author has ſometimes been miſled by too great a deſire of generalizing his principles, he has had the merit of directing the attention of philoſophers to a view of human nature, which had formerly in a great meaſure eſcaped their notice. Of the great proportion of juſt and ſound reaſoning which the theory involves its ſtriking plauſibility

bility is a ſufficient proof; for, as the author himſelf has remarked, no ſyſtem in morals can well gain our aſſent, if it does not border, in ſome reſpects, upon the truth. "A ſyſtem "of natural philoſophy (he obſerves) may "appear very plauſible, and be for a long "time very generally received in the world, "and yet have no foundation in nature; but "the author who ſhould aſſign as the cauſe "of any natural ſentiment, ſome principle "which neither had any connection with it, "nor reſembled any other principle which "had ſome connection, would appear abſurd "and ridiculous to the moſt injudicious and "inexperienced reader." The merit, however, of Mr. Smith's performance does not reſt here. No work, undoubtedly, can be mentioned, ancient or modern, which exhibits ſo complete a view of thoſe facts with reſpect to our moral perceptions, which it is one great object of this branch of ſcience to refer to their general laws; and upon this account, it well deſerves the careful ſtudy of all whoſe taſte leads them to proſecute ſimilar inquiries. Theſe facts are indeed frequently expreſſed in a language which involves the author's peculiar theories: But they are always preſented in the moſt happy and beautiful lights; and it is eaſy for an attentive reader, by ſtripping them of hypothetical terms, to ſtate them to himſelf with that lo-

SECT. II. gical precision, which, in such very difficult disquisitions, can alone conduct us with certainty to the truth.

It is proper to observe farther, that with the theoretical doctrines of the book, there are every where interwoven, with singular taste and address, the purest and most elevated maxims concerning the practical conduct of life; and that it abounds throughout with interesting and instructive delineations of characters and manners. A considerable part of it too is employed in collateral inquiries, which, upon every hypothesis that can be formed concerning the foundation of morals, are of equal importance. Of this kind is the speculation formerly mentioned, with respect to the influence of fortune on our moral sentiments, and another speculation, no less valuable, with respect to the influence of custom and fashion on the same part of our constitution.

The style in which Mr. Smith has conveyed the fundamental principles on which his theory rests, does not seem to me to be so perfectly suited to the subject as that which he employs on most other occasions. In communicating ideas which are extremely abstract and subtile, and about which it is hardly possible to reason correctly, without the scrupulous use of appropriated terms, he sometimes presents to us a choice of words, by no means strictly synonimous, so as to divert the attention

tion from a precise and steady conception of his proposition: and a similar effect is, in other instances, produced by that diversity of forms which, in the course of his copious and seducing composition, the same truth insensibly assumes. When the subject of his work leads him to address the imagination and the heart, the variety and felicity of his illustrations; the richness and fluency of his eloquence; and the skill with which he wins the attention and commands the passions of his readers, leave him, among our English moralists, without a rival.

THE Dissertation on the Origin of Languages, which was, I believe, first annexed to the second edition of the Theory of Moral Sentiments, is an essay of great ingenuity, and on which the author himself set a high value; but, in a general review of his publications, it deserves our attention less, on account of the opinions it contains, than as a specimen of a particular sort of inquiry, which, so far as I know, is entirely of modern origin, and which seems, in a peculiar degree, to have interested Mr. Smith's curiosity. Something very similar to it may be traced in all his different works, whether moral, political, or literary; and on all these subjects he has exemplified it with the happiest success.

When,

I. When, in ſuch a period of ſociety as that in which we live, we compare our intellectual acquirements, our opinions, manners, and inſtitutions, with thoſe which prevail among rude tribes, it cannot fail to occur to us as an intereſting queſtion, by what gradual ſteps the tranſition has been made from the firſt ſimple efforts of uncultivated nature, to a ſtate of things ſo wonderfully artificial and complicated. Whence has ariſen that ſyſtematical beauty which we admire in the ſtructure of a cultivated language; that analogy which runs through the mixture of languages ſpoken by the moſt remote and unconnected nations; and thoſe peculiarities by which they are all diſtinguiſhed from each other? Whence the origin of the different ſciences and of the different arts; and by what chain has the mind been led from their firſt rudiments to their laſt and moſt refined improvements? Whence the aſtoniſhing fabrick of the political union; the fundamental principles which are common to all governments; and the different forms which civilized ſociety has aſſumed in different ages of the world? On moſt of theſe ſubjects very little information is to be expected from hiſtory; for long before that ſtage of ſociety when men begin to think of recording their tranſactions, many of the moſt important ſteps of their progreſs have been made. A few inſulated facts may perhaps be collected from

from the casual observations of travellers, who have viewed the arrangements of rude nations; but nothing, it is evident, can be obtained in this way, which approaches to a regular and connected detail of human improvement.

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In this want of direct evidence, we are under a necessity of supplying the place of fact by conjecture; and when we are unable to ascertain how men have actually conducted themselves upon particular occasions, of considering in what manner they are likely to have proceeded, from the principles of their nature, and the circumstances of their external situation. In such inquiries, the detached facts which travels and voyages afford us, may frequently serve as land-marks to our speculations; and sometimes our conclusions *a priori* may tend to confirm the credibility of facts, which, on a superficial view, appeared to be doubtful or incredible.

Nor are such theoretical views of human affairs subservient merely to the gratification of curiosity. In examining the history of mankind, as well as in examining the phenomena of the material world, when we cannot trace the process by which an event *has been* produced, it is often of importance to be able to show how it *may have been* produced by natural causes. Thus, in the instance which has suggested these remarks, although it is

 impossible

SEC. II. impoſſible to determine with certainty what the ſteps were by which any particular language was formed; yet if we can ſhew, from the known principles of human nature, how all its various parts might gradually have ariſen, the mind is not only to a certain degree ſatisfied, but a check is given to that indolent philoſophy, which refers to a miracle, whatever appearances, both in the natural and moral worlds, it is unable to explain.

To this ſpecies of philoſophical inveſtigation, which has no appropriated name in our language, I ſhall take the liberty of giving the title of *Theoretical* or *Conjectural Hiſtory*; an expreſſion which coincides pretty nearly in its meaning with that of *Natural Hiſtory*, as employed by Mr. Hume*, and with what ſome French writers have called *Hiſtoire Raiſonnée*.

The mathematical ſciences, both pure and mixed, afford, in many of their branches, very favourable ſubjects for theoretical hiſtory; and a very competent judge, the late M. d'Alembert, has recommended this arrangement of their elementary principles, which is founded on the natural ſucceſſion of inventions and diſcoveries, as the beſt adapted for intereſting the curioſity and exerciſing the genius of ſtudents. The ſame author points out as a model a paſſage in Montucla's Hiſtory

* See his Natural Hiſtory of Religion.

of

of Mathematics, where an attempt is made to exhibit the gradual progreſs of philoſophical ſpeculation, from the firſt concluſions ſuggeſted by a general ſurvey of the heavens, to the doctrines of Copernicus. It is ſomewhat remarkable, that a theoretical hiſtory of this very ſcience (in which we have, perhaps, a better opportunity than in any other inſtance whatever, of comparing the natural advances of the mind with the actual ſucceſſion of hypothetical ſyſtems) was one of Mr. Smith's earlieſt compoſitions, and is one of the very ſmall number of his manuſcripts which he did not deſtroy before his death. SECT. III.

I already hinted, that inquiries perfectly analogous to theſe may be applied to the modes of government, and to the municipal inſtitutions which have obtained among different nations. It is but lately, however, that theſe important ſubjects have been conſidered in this point of view; the greater part of politicians before the time of Monteſquieu, having contented themſelves with an hiſtorical ſtatement of facts, and with a vague reference of laws to the wiſdom of particular legiſlators, or to accidental circumſtances, which it is now impoſſible to aſcertain. Monteſquieu, on the contrary, conſidered laws as originating chiefly from the circumſtances of ſociety; and attempted to account, from the changes in the condition of mankind, which take place

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in the different ſtages of their progreſs, for the correſponding alterations which their inſtitutions undergo. It is thus that, in his occaſional elucidations of the Roman juriſprudence, inſtead of bewildering himſelf among the erudition of ſcholiaſts and of antiquaries, we frequently find him borrowing his lights from the moſt remote and unconnected quarters of the globe, and combining the caſual obſervations of illiterate travellers and navigators, into a philoſophical commentary on the hiſtory of law and of manners.

The advances made in this line of inquiry ſince Monteſquieu's time have been great. Lord Kames, in his Hiſtorical Law Tracts, has given ſome excellent ſpecimens of it, particularly in his Eſſays on the Hiſtory of Property and of Criminal Law, and many ingenious ſpeculations of the ſame kind occur in the works of Mr. Millar.

In Mr. Smith's writings, whatever be the nature of his ſubject, he ſeldom miſſes an opportunity of indulging his curioſity, in tracing from the principles of human nature, or from the circumſtances of ſociety, the origin of the opinions and the inſtitutions which he deſcribes. I formerly mentioned a fragment concerning the Hiſtory of Aſtronomy which he has left for publication; and I have heard him ſay more than once, that he had projected, in the earlier part of his life, a hiſtory of

of the other ſciences on the ſame plan. In his Wealth of Nations, various diſquiſitions are introduced which have a like object in view, particularly the theoretical delineation he has given of the natural progreſs of opulence in a country; and his inveſtigation of the cauſes which have inverted this order in the different countries of modern Europe. His lectures on juriſprudence ſeem, from the account of them formerly given, to have abounded in ſuch inquiries.

I am informed by the ſame gentleman who favoured me with the account of Mr. Smith's lectures at Glaſgow, that he had heard him ſometimes hint an intention of writing a treatiſe upon the Greek and Roman republics. "And after all that has been publiſhed on "that ſubject, I am convinced (ſays he), that "the obſervations of Mr. Smith would have "ſuggeſted many new and important views "concerning the internal and domeſtic cir-"cumſtances of thoſe nations, which would "have diſplayed their ſeveral ſyſtems of po-"licy, in a light much leſs artificial than "that in which they have hitherto appeared."

The ſame turn of thinking was frequently, in his ſocial hours, applied to more familiar ſubjects; and the fanciful theories which, without the leaſt affectation of ingenuity, he was continually ſtarting upon all the common topics of diſcourſe, gave to his converſation a

T. novelty and variety that were quite inexhauſtible. Hence too the minuteneſs and accuracy of his knowledge on many trifling articles, which, in the courſe of his ſpeculations, he had been led to conſider from ſome new and intereſting point of view; and of which his lively and circumſtantial deſcriptions amuſed his friends the more, that he ſeemed to be habitually inattentive, in ſo remarkable a degree, to what was paſſing around him.

I have been led into theſe remarks by the Diſſertation on the Formation of Languages, which exhibits a very beautiful ſpecimen of theoretical hiſtory, applied to a ſubject equally curious and difficult. The analogy between the train of thinking from which it has taken its riſe, and that which has ſuggeſted a variety of his other diſquiſitions, will, I hope, be a ſufficient apology for the length of this digreſſion; more particularly, as it will enable me to ſimplify the account which I am to give afterwards, of his inquiries concerning political economy.

I ſhall only obſerve farther on this head, that when different theoretical hiſtories are propoſed by different writers, of the progreſs of the human mind in any one line of exertion, theſe theories are not always to be underſtood as ſtanding in oppoſition to each other. If the progreſs delineated in all of them be plauſible, it is poſſible at leaſt, that they may all have

have been realized; for human affairs never exhibit, in any two instances, a perfect uniformity. But whether they have been realized or no, is often a question of little consequence. In most cases, it is of more importance to ascertain the progress that is most simple, than the progress that is most agreeable to fact; for, paradoxical as the proposition may appear, it is certainly true, that the real progress is not always the most natural. It may have been determined by particular accidents, which are not likely again to occur, and which cannot be considered as forming any part of that general provision which nature has made for the improvement of the race.

IN order to make some amends for the length (I am afraid I may add for the tedious ness) of this section, I shall subjoin to it an original letter of Mr. Hume's, addressed to Mr. Smith, soon after the publication of his Theory. It is strongly marked with that easy and affectionate pleasantry which distinguished Mr. Hume's epistolary correspondence, and is entitled to a place in this Memoir, on account of its connection with an important event of Mr. Smith's life, which soon after removed him into a new scene, and influenced, to a considerable degree, the subsequent

SECT. II. ſequent courſe of his ſtudies. The letter is dated from London, 12th April 1759.

"I give you thanks for the agreeable preſent of your Theory. Wedderburn and I made preſents of our copies to ſuch of our acquaintances as we thought good judges, and proper to ſpread the reputation of the book. I ſent one to the Duke of Argyll, to Lord Lyttleton, Horace Walpole, Soame Jennyns, and Burke, an Iriſh gentleman, who wrote lately a very pretty treatiſe on the Sublime. Millar deſired my permiſſion to ſend one in your name to Dr. Warburton. I have delayed writing to you till I could tell you ſomething of the ſucceſs of the book, and could prognoſticate with ſome probability, whether it ſhould be finally damned to oblivion, or ſhould be regiſtered in the temple of immortality. Though it has been publiſhed only a few weeks, I think there appear already ſuch ſtrong ſymptoms, that I can almoſt venture to foretel its fate. It is in ſhort this——— But I have been interrupted in my letter by a fooliſh impertinent viſit of one who has lately come from Scotland. He tells me that the Univerſity of Glaſgow intend to declare Rouet's office vacant, upon his going abroad with Lord Hope. I queſtion not but you will have our friend Ferguſon in your eye, in caſe another project for procuring him a place in the Univerſity of Edinburgh

ſhould

ſhould fail. Fergufon has very much poliſhed and improved his treatiſe on Refinement*, and with ſome amendments it will make an admirable book, and diſcovers an elegant and a ſingular genius. The Epigoniad, I hope, will do; but it is ſomewhat up-hill work. As I doubt not but you conſult the reviews ſometimes at preſent, you will ſee in the Critical Review a letter upon that poem; and I deſire you to employ your conjectures in finding out the author. Let me ſee a ſample of your ſkill in knowing hands by your gueſſing at the perſon. I am afraid of Lord Kames's Law Tracts. A man might as well think of making a fine ſauce by a mixture of wormwood and aloes, as an agreeable compoſition by joining metaphyſics and Scotch law. However, the book, I believe, has merit; though few people will take the pains of diving into it. But, to return to your book, and its ſucceſs in this town, I muſt tell you——— A plague of interruptions! I ordered myſelf to be denied; and yet here is one that has broke in upon me again. He is a man of letters, and we have had a good deal of literary converſation. You told me that you was curious of literary anecdotes, and therefore I ſhall inform you of a few that

* Publiſhed afterwards under the title of "An Eſſay on the Hiſtory of Civil Society."

have

T. have come to my knowledge. I believe I have mentioned to you already Helvetius's book *de l'Esprit*. It is worth your reading, not for its philosophy, which I do not highly value, but for its agreeable composition. I had a letter from him a few days ago, wherein he tells me that my name was much oftener in the manuscript, but that the Censor of books at Paris obliged him to strike it out. Voltaire has lately published a small work called *Candide, ou l'Optimisme*. I shall give you a detail of it——— But what is all this to my book? say you.—My dear Mr. Smith, have patience: Compose yourself to tranquillity. Shew yourself a philosopher in practice as well as profession: Think on the emptiness, and rashness, and futility of the common judgments of men: How little they are regulated by reason in any subject, much more in philosophical subjects, which so far exceed the comprehension of the vulgar.

——— Non si quid turbida Roma,
Elevet, accedas: examenve improbum in illa
Castiges trutina: nec te quæsiveris extra.

A wise man's kingdom is his own breast; or, if he ever looks farther, it will only be to the judgment of a select few, who are free from prejudices, and capable of examining his work. Nothing indeed can be a stronger presumption of falsehood than the approbation

of the multitude; and Phocion, you know, always suspected himself of some blunder, when he was attended with the applauses of the populace. SECT. II.

"Supposing, therefore, that you have duly prepared yourself for the worst by all these reflections, I proceed to tell you the melancholy news, that your book has been very unfortunate; for the public seem disposed to applaud it extremely. It was looked for by the foolish people with some impatience; and the mob of literati are beginning already to be very loud in its praises. Three Bishops called yesterday at Millar's shop in order to buy copies, and to ask questions about the author. The Bishop of Peterborough said he had passed the evening in a company where he heard it extolled above all books in the world. The Duke of Argyll is more decisive than he uses to be in its favour. I suppose he either considers it as an exotic, or thinks the author will be serviceable to him in the Glasgow elections. Lord Lyttleton says, that Robertson and Smith and Bower are the glories of English literature. Oswald protests he does not know whether he has reaped more instruction or entertainment from it. But you may easily judge what reliance can be put on his judgment who has been engaged all his life in public business, and who never sees any faults in his friends. Millar exults and brags

T. brags that two-thirds of the edition are already ſold, and that he is now ſure of ſucceſs. You ſee what a ſon of the earth that is, to value books only by the profit they bring him. In that view, I believe it may prove a very good book.

" Charles Townſend, who paſſes for the cleverest fellow in England, is ſo taken with the performance, that he ſaid to Oſwald he would put the Duke of Buccleuch under the author's care, and would make it worth his while to accept of that charge. As ſoon as I heard this I called on him twice, with a view of talking with him about the matter, and of convincing him of the propriety of ſending that young Nobleman to Glaſgow: For I could not hope, that he could offer you any terms which would tempt you to renounce your Profeſſorſhip. But I miſſed him. Mr. Townſend paſſes for being a little uncertain in his reſolutions; ſo perhaps you need not build much on this ſally.

" In recompence for ſo many mortifying things which nothing but truth could have extorted from me, and which I could eaſily have multiplied to a greater number, I doubt not but you are ſo good a Chriſtian as to return good for evil; and to flatter my vanity by telling me, that all the godly in Scotland abuſe me for my account of John Knox and the Reformation. I ſuppoſe you are glad to

see my paper end, and that I am obliged to conclude with SECT. II.

Your humble servant,

DAVID HUME."

SECT. III.

From the Publication of The Theory of Moral Sentiments, till that of The Wealth of Nations.

AFTER the publication of the Theory of Moral Sentiments, Mr. Smith remained four years at Glasgow, discharging his official duties with unabated vigour, and with increasing reputation. During that time, the plan of his lectures underwent a considerable change. His ethical doctrines, of which he had now published so valuable a part, occupied a much smaller portion of the course than formerly: and accordingly, his attention was naturally directed to a more complete illustration of the principles of jurisprudence and of political economy. SECT. III.

To this last subject, his thoughts appear to have been occasionally turned from a very early period of life. It is probable, that the uninterrupted friendship he had always maintained with his old companion Mr. Oswald, had

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had some tendency to encourage him in prosecuting this branch of his studies; and the publication of Mr. Hume's political discourses, in the year 1752, could not fail to confirm him in those liberal views of commercial policy which had already opened to him in the course of his own inquiries. His long residence in one of the most enlightened mercantile towns in this island, and the habits of intimacy in which he lived with the most respectable of its inhabitants, afforded him an opportunity of deriving what commercial information he stood in need of, from the best sources; and it is a circumstance no less honourable to their liberality than to his talents, that notwithstanding the reluctance so common among men of business to listen to the conclusions of mere speculation, and the direct opposition of his leading principles to all the old maxims of trade, he was able, before he quitted his situation in the university, to rank some very eminent merchants in the number of his proselytes*.

Among the students who attended his lectures, and whose minds were not previously warped by prejudice, the progress of his opinions, it may be reasonably supposed, was much more rapid. It was this class of his friends accordingly that first adopted his sys-

* I mention this fact on the respectable authority of James Ritchie, Esq. of Glasgow.

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tem with eagerness, and diffused a knowledge of its fundamental principles over this part of the kingdom. SECT. III.

Towards the end of 1763, Mr. Smith received an invitation from Mr. Charles Townsend to accompany the Duke of Buccleuch on his travels; and the liberal terms in which the proposal was made to him, added to the strong desire he had felt of visiting the Continent of Europe, induced him to resign his office at Glasgow. With the connection which he was led to form in consequence of this change in his situation, he had reason to be satisfied in an uncommon degree, and he always spoke of it with pleasure and gratitude. To the public, it was not perhaps a change equally fortunate; as it interrupted that studious leisure for which nature seems to have destined him, and in which alone he could have hoped to accomplish those literary projects which had flattered the ambition of his youthful genius.

The alteration, however, which, from this period, took place in his habits, was not without its advantages. He had hitherto lived chiefly within the walls of an university; and although to a mind like his, the observation of human nature on the smallest scale is sufficient to convey a tolerably just conception of what passes on the great theatre of the world, yet it is not to be doubted, that the variety

T. variety of ſcenes through which he afterwards paſſed, muſt have enriched his mind with many new ideas, and corrected many of thoſe miſapprehenſions of life and manners which the beſt deſcriptions of them can ſcarcely fail to convey. — But whatever were the lights that his travels afforded to him as a ſtudent of human nature, they were probably uſeful in a ſtill greater degree, in enabling him to perfect that ſyſtem of political economy, of which he had already delivered the principles in his lectures at Glaſgow, and which it was now the leading object of his ſtudies to prepare for the public. The coincidence between ſome of theſe principles and the diſtinguiſhing tenets of the French economiſts, who were at that very time in the height of their reputation, and the intimacy in which he lived with ſome of the leaders of that ſect, could not fail to aſſiſt him in methodizing and digeſting his ſpeculations; while the valuable collection of facts, accumulated by the zealous induſtry of their numerous adherents, furniſhed him with ample materials for illuſtrating and confirming his theoretical concluſions.

After leaving Glaſgow, Mr. Smith joined the Duke of Buccleuch at London early in the year 1764, and ſet out with him for the Continent in the month of March following. At Dover they were met by Sir James Macdonald, who accompanied them to Paris, and with whom

whom Mr. Smith laid the foundation of a friendſhip, which he always mentioned with great ſenſibility, and of which he often lamented the ſhort duration. The panegyrics with which the memory of this accompliſhed and amiable perſon has been honoured by ſo many diſtinguiſhed characters in the different countries of Europe, are a proof how well fitted his talents were to command general admiration. The eſteem in which his abilities and learning were held by Mr. Smith, is a teſtimony to his extraordinary merit of ſtill ſuperior value. Mr. Hume, too, ſeems, in this inſtance, to have partaken of his friend's enthuſiaſm. "Were you and I together "(ſays he in a letter to Mr. Smith), we ſhould "ſhed tears at preſent for the death of poor "Sir James Macdonald. We could not poſ-"ſibly have ſuffered a greater loſs than in "that valuable young man."

In this firſt viſit to Paris, the Duke of Buccleuch and Mr. Smith employed only ten or twelve days*, after which they proceeded to Thouloufe,

* The day after his arrival at Paris, Mr. Smith ſent a formal reſignation of his Profeſſorſhip to the Rector of the Univerſity of Glaſgow. "I never was more anxious (ſays he in the concluſion "of this letter) for the good of the College, than at this moment; "and I ſincerely wiſh, that whoever is my ſucceſſor may not only "do credit to the office by his abilities, but be a comfort to the "very excellent men with whom he is likely to ſpend his life, by "the probity of his heart, and the goodneſs of his temper."

The following extract from the records of the Univerſity, which follows immediately after Mr. Smith's letter of reſignation, is at

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Thoulouſe, where they fixed their reſidence for eighteen months; and where, in addition to the pleaſure of an agreeable ſociety, Mr. Smith had an opportunity of correcting and extending his information concerning the internal policy of France, by the intimacy in which he lived with ſome of the principal perſons of the Parliament.

From Thoulouſe they went, by a pretty extenſive tour, through the ſouth of France to Geneva. Here they paſſed two months. The late Earl Stanhope, for whoſe learning and worth Mr. Smith entertained a ſincere reſpect, was then an inhabitant of that republic.

About Chriſtmas 1765, they returned to Paris, and remained there till October following. The ſociety in which Mr. Smith ſpent

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once a teſtimony to his aſſiduity as a Profeſſor, and a proof of the juſt ſenſe which that learned body entertained of the talents and worth of the colleague they had loſt:

"The meeting accept of Dr. Smith's reſignation, in terms of "the above letter, and the office of Profeſſor of Moral Philoſophy "in this Univerſity is therefore hereby declared to be vacant. The "Univerſity, at the ſame time, cannot help expreſſing their ſincere "regret at the removal of Dr. Smith, whoſe diſtinguiſhed probity "and amiable qualities procured him the eſteem and affection of "his colleagues; and whoſe uncommon genius, great abilities, and "extenſive learning, did ſo much honour to this ſociety; his "elegant and ingenious Theory of Moral Sentiments having "recommended him to the eſteem of men of taſte and literature "throughout Europe. His happy talent in illuſtrating abſtracted "ſubjects, and faithful aſſiduity in communicating uſeful know-"ledge, diſtinguiſhed him as a Profeſſor, and at once afforded "the greateſt pleaſure and the moſt important inſtruction to the "youth under his care."

theſe ten months, may be conceived from the advantages he enjoyed, in conſequence of the recommendations of Mr. Hume. Turgot, Queſnai, Necker, D'Alembert, Helvetius, Marmontel, Madame Riccoboni, were among the number of his acquaintances; and ſome of them he continued ever afterwards to reckon among his friends. From Madame D'Anville, the reſpectable mother of the late excellent and much lamented Duke of Rochefoucauld *, he received many attentions, which

* The following letter, which has been very accidentally preſerved, while it ſerves as a memorial of Mr. Smith's connection with the family of Rochefoucauld, is ſo expreſſive of the virtuous and liberal mind of the writer, that I am perſuaded it will give pleaſure to the Society to record it in their Tranſactions :

Paris, 3. *Mars* 1778.

" Le deſir de ſe rappeller à votre ſouvenir, Monſieur, quand on a eu l'honneur de vous connoître, doit vous paroitre fort naturel ; permettez que nous ſaiſiſſions pour cela, ma Mère et moi, l'occaſion d'une edition nouvelle des *Maximes de la Rochefoucauld*, dont nous prenons la liberté de vous offrir un exemplaire. Vous voyez que nous n'avons point de rancune, puiſque le mal que vous avez dit de lui dans la *Théorie des Sentimens Moraux*, ne nous empêche point de vous envoyer ce même ouvrage. Il s'en eſt même fallu de peu que je ne fiſſe encore plus, car j'avois eu peut-être la témérité d'entreprendre une traduction de votre *Théorie*; mais comme je venois de terminer la première partie, j'ai vu paroître la traduction de M. l'Abbé Blavet, et j'ai été forcé de renoncer au plaiſir que j'aurois eu de faire paſſer dans ma langue un des meilleurs ouvrages de la vôtre *.

" Il auroit bien fallu pour lors entreprendre une juſtification de mon grandpère. Peut-être n'auroit-il pas été difficile, premièrement de l'excuſer, en diſant, qu'il avoit toujours vu les hommes à la Cour, et dans la guerre civile, *deux théatres ſur leſquels ils ſont*

* Note (C.)

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which he always recollected with particular gratitude.

It is much to be regretted, that he preſerved no journal of this very intereſting period of his hiſtory; and ſuch was his averſion to write letters, that I ſcarcely ſuppoſe any memorial of it exiſts in his correſpondence with his friends. The extent and accuracy of his memory, in which he was equalled by few, made it of little conſequence to himſelf

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certainement plus mauvais qu'ailleurs; et enſuite de juſtifier par la conduite perſonelle de l'auteur, les principes qui ſont certainement trop généraliſés dans ſon ouvrage. Il a pris la partie pour le tout; et parceque les gens qu'il avoit eu le plus ſous les yeux étoient animés par *l'amour propre*, il en a fait le mobile général de tous les hommes. Au reſte, quoique ſon ouvrage merite à certains égards d'être combattu, il eſt cependant eſtimable même pour le fond, et beaucoup pour la forme.

" Permettez-moi de vous demander, ſi nous aurons bientôt une édition complette des œuvres de votre illuſtre ami M. Hume? Nous l'avons ſincèrement regretté.

" Recevez, je vous ſupplie, l'expreſſion ſincère de tous les ſentimens d'eſtime et d'attachement avec leſquels j'ai l'honneur d'être, Monſieur, votre très humble et très obeiſſant ſerviteur,

" Le Duc de la ROCHEFOUCAULD."

Smith's laſt intercourſe with this excellent man was in the 1789, when he informed him, by means of a friend who hap- ed to be then at Paris, that in the future editions of his *Theory* e of Rochefoucauld ſhould be no longer claſſed with that of neville. In the enlarged edition, accordingly, of that work, d a ſhort time before his death, he has ſuppreſſed his cenſure author of the *Maximes;* who ſeems indeed (however excep- of his principles may be) to have been actuated, both and writings, by motives very different from thoſe of nevile. The real ſcope of theſe maxims is placed, I think, in by the ingenious author of the *notice* prefixed to the 1 publiſhed at Paris in 1778.

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to record in writing what he heard or ſaw; and from his anxiety before his death to deſtroy all the papers in his poſſeſſion, he ſeems to have wiſhed, that no materials ſhould remain for his biographers, but what were furniſhed by the laſting monuments of his genius, and the exemplary worth of his private life.

The ſatisfaction he enjoyed in the converſation of Turgot may be eaſily imagined. Their opinions on the moſt eſſential points of political economy were the ſame; and they were both animated by the ſame zeal for the beſt intereſts of mankind. The favourite ſtudies, too, of both, had directed their inquiries to ſubjects on which the underſtandings of the ableſt and the beſt informed are liable to be warped, to a great degree, by prejudice and paſſion; and on which, of conſequence, a coincidence of judgment is peculiarly gratifying. We are told by one of the biographers of Turgot, that after his retreat from the miniſtry, he occupied his leiſure in a philoſophical correſpondence with ſome of his old friends; and, in particular, that various letters on important ſubjects paſſed between him and Mr. Smith. I take notice of this anecdote chiefly as a proof of the intimacy which was underſtood to have ſubſiſted between them; for in other reſpects, the anecdote ſeems to me to be ſomewhat doubtful. It is

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ſcarcely to be ſuppoſed, that Mr. Smith would deſtroy the letters of ſuch a correſpondent as Turgot; and ſtill leſs probable, that ſuch an intercourſe was carried on between them without the knowledge of any of Mr. Smith's friends. From ſome inquiries that have been made at Paris by a gentleman of this Society ſince Mr. Smith's death, I have reaſon to believe, that no evidence of the correſpondence exiſts among the papers of M. Turgot, and that the whole ſtory has taken its riſe from a report ſuggeſted by the knowledge of their former intimacy. This circumſtance I think it of importance to mention, becauſe a good deal of curioſity has been excited by the paſſage in queſtion, with reſpect to the fate of the ſuppoſed letters.

Mr. Smith was alſo well known to M. Queſnai, the profound and original author of the Economical Table; a man (according to Mr. Smith's account of him) "of the greateſt "modeſty and ſimplicity;" and whoſe ſyſtem of political economy he has pronounced, "with all its imperfections," to be "the "neareſt approximation to the truth that has "yet been publiſhed on the principles of that "very important ſcience." If he had not been prevented by Queſnai's death, Mr. Smith had once an intention (as he told me himſelf) to have inſcribed to him his "Wealth of Nations."

It

It was not, however, merely the diſtinguiſhed men who about this period fixed ſo ſplendid an æra in the literary hiſtory of France, that excited Mr. Smith's curioſity while he remained in Paris. His acquaintance with the polite literature both of ancient and modern times was extenſive; and amidſt his various other occupations, he had never neglected to cultivate a taſte for the fine arts;—leſs, it is probable, with a view to the peculiar enjoyments they convey, (though he was by no means without ſenſibility to their beauties,) than on account of their connection with the general principles of the human mind; to an examination of which they afford the moſt pleaſing of all avenues. To thoſe who ſpeculate on this very delicate ſubject, a compariſon of the modes of taſte that prevail among different nations, affords a valuable collection of facts; and Mr. Smith, who was always diſpoſed to aſcribe to cuſtom and faſhion their full ſhare in regulating the opinions of mankind with reſpect to beauty, may naturally be ſuppoſed to have availed himſelf of every opportunity which a foreign country afforded him of illuſtrating his former theories.

Some of his peculiar notions, too, with reſpect to the imitative arts, ſeem to have been much confirmed by his obſervations while abroad. In accounting for the pleaſure we receive from theſe arts, it had early occurred

SECT. III. to him as a fundamental principle, that a very great part of it arifes from the difficulty of the imitation; a principle which was probably fuggefted to him by that of the *difficulté furmontée*, by which fome French critics had attempted to explain the effect of verification and of rhyme*. This principle Mr. Smith pufhed to the greateft poffible length, and referred to it, with fingular ingenuity, a great variety of phenomena in all the different fine arts. It led him, however, to fome conclufions, which appear, at firft view at leaft, not a little paradoxical; and I cannot help thinking, that it warped his judgment in many of the opinions which he was accuftomed to give on the fubject of poetry.

The principles of dramatic compofition had more particularly attracted his attention; and the hiftory of the theatre, both in ancient and modern times, had furnifhed him with fome of the moft remarkable facts on which his theory of the imitative arts was founded. From this theory it feemed to follow as a confequence, that the fame circumftances which, in tragedy, give to blank verfe an advantage over profe, fhould give to rhyme an advantage over blank verfe; and Mr. Smith had always inclined to that opinion. Nay, he had gone fo far as to extend the fame

* See the Preface to Voltaire's *Oedipe*, edit. of 1729.

doctrine

doctrine to comedy; and to regret that those excellent pictures of life and manners which the English stage affords, had not been executed after the model of the French school. The admiration with which he regarded the great dramatic authors of France tended to confirm him in these opinions; and this admiration (resulting originally from the general character of his taste, which delighted more to remark that pliancy of genius which accommodates itself to established rules, than to wonder at the bolder flights of an undisciplined imagination) was increased to a great degree, when he saw the beauties that had struck him in the closet, heightened by the utmost perfection of theatrical exhibition. In the last years of his life, he sometimes amused himself, at a leisure hour, in supporting his theoretical conclusions on these subjects, by the facts which his subsequent studies and observations had suggested; and he intended, if he had lived, to have prepared the result of these labours for the press. Of this work he has left for publication a short fragment; but he had not proceeded far enough to apply his doctrine to versification and to the theatre. As his notions, however, with respect to these were a favourite topic of his conversation, and were intimately connected with his general principles of criticism, it would have been improper to pass them over in this sketch of his

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his life; and I even thought it proper to detail them at greater length than the comparative importance of the ſubject would have juſtified, if he had carried his plans into execution. Whether his love of ſyſtem, added to his partiality for the French drama, may not have led him, in this inſtance, to generalize a little too much his concluſions, and to overlook ſome peculiarities in the language and verſification of that country, I ſhall not take upon me to determine.

In October 1766, the Duke of Buccleuch returned to London. His Grace, to whom I am indebted for ſeveral particulars in the foregoing narrative, will, I hope, forgive the liberty I take in tranſcribing one paragraph in his own words: "In October 1766, we returned to London, after having ſpent near three years together, without the ſlighteſt diſagreement or coolneſs;—on my part, with every advantage that could be expected from the ſociety of ſuch a man. We continued to live in friendſhip till the hour of his death; and I ſhall always remain with the impreſſion of having loſt a friend whom I loved and reſpected, not only for his great talents, but for every private virtue."

The retirement in which Mr. Smith paſſed his next ten years, formed a ſtriking contraſt to the unſettled mode of life he had been for ſome

ſome time accuſtomed to, but was ſo congenial to his natural diſpoſition, and to his firſt habits, that it was with the utmoſt difficulty he was ever perſuaded to leave it. During the whole of this period, (with the exception of a few viſits to Edinburgh and London,) he remained with his mother at Kirkaldy; occupied habitually in intenſe ſtudy, but unbending his mind at times in the company of ſome of his old ſchool-fellows, whoſe "ſober wiſhes" had attached them to the place of their birth. In the ſociety of ſuch men, Mr. Smith delighted; and to them he was endeared, not only by his ſimple and unaſſuming manners, but by the perfect knowledge they all poſſeſſed of thoſe domeſtic virtues which had diſtinguiſhed him from his infancy.

Mr. Hume, who (as he tells us himſelf) conſidered "a town as the true ſcene for a "man of letters," made many attempts to ſeduce him from his retirement. In a letter, dated in 1772, he urges him to paſs ſome time with him in Edinburgh. "I ſhall not "take any excuſe from your ſtate of health, "which I ſuppoſe only a ſubterfuge invented "by indolence and love of ſolitude. Indeed, "my dear Smith, if you continue to hearken "to complaints of this nature, you will cut "yourſelf out entirely from human ſociety, "to the great loſs of both parties." In another letter, dated in 1769, from his houſe in

SECT. III. in James's Court, (which commanded a prospect of the Frith of Forth, and of the opposite coast of Fife,) " I am glad (says he) to have " come within sight of you; but as I would " also be within speaking terms with you, I " wish we could concert measures for that " purpose. I am mortally sick at sea, and " regard with horror and a kind of hydro- " phobia the great gulf that lies between us. " I am also tired of travelling, as much as " you ought naturally to be of staying at " home. I therefore propose to you to come " hither, and pass some days with me in this " solitude. I want to know what you have " been doing, and propose to exact a rigorous " account of the method in which you have " employed yourself during your retreat. I " am positive you are in the wrong in many " of your speculations, especially where you " have the misfortune to differ from me. All " these are reasons for our meeting, and I wish " you would make me some reasonable pro- " posal for that purpose. There is no habi- " tation in the island of Inchkeith, otherwise " I should challenge you to meet me on that " spot, and neither of us ever to leave the " place, till we were fully agreed on all points " of controversy. I expect General Conway " here to-morrow, whom I shall attend to " Roseneath, and I shall remain there a few " days. On my return, I hope to find a " letter

" letter from you, containing a bold accept-
" ance of this defiance."

At length (in the beginning of the year 1776) Mr. Smith accounted to the world for his long retreat, by the publication of his " Inquiry into the Nature and Caufes of the " Wealth of Nations." A letter of congratulation on this event, from Mr. Hume, is now before me. It is dated 1ft April 1776 (about fix months before Mr. Hume's death), and difcovers an amiable folicitude about his friend's literary fame. " *Euge! Belle!* Dear " Mr. Smith: I am much pleafed with your " performance, and the perufal of it has taken " me from a ftate of great anxiety. It was a " work of fo much expectation, by yourfelf, " by your friends, and by the public, that I " trembled for its appearance; but am now " much relieved. Not but that the reading " of it neceffarily requires fo much attention, " and the public is difpofed to give fo little, " that I fhall ftill doubt for fome time of its " being at firft very popular. But it has " depth and folidity and acutenefs, and is fo " much illuftrated by curious facts, that it " muft at laft take the public attention. It " is probably much improved by your laft " abode in London. If you were here at my " fire-fide, I fhould difpute fome of your " principles. . . . . But " thefe, and a hundred other points, are fit

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"only to be discussed in conversation. I hope "it will be soon; for I am in a very bad state "of health, and cannot afford a long delay."

Of a book which is now so universally known as "The Wealth of Nations," it might be considered perhaps as superfluous to give a particular analysis; and, at any rate, the limits of this essay make it impossible for me to attempt it at present. A few remarks, however, on the object and tendency of the work, may, I hope, be introduced without impropriety. The history of a philosopher's life can contain little more than the history of his speculations; and in the case of such an author as Mr. Smith, whose studies were systematically directed from his youth to subjects of the last importance to human happiness, a review of his writings, while it serves to illustrate the peculiarities of his genius, affords the most faithful picture of his character as a man.

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Of the Inquiry into the Nature and Causes of the Wealth of Nations *.

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AN hiſtorical view of the different forms under which human affairs have appeared in different ages and nations, naturally ſuggeſts the queſtion, Whether the experience of former times may not now furniſh ſome general principles to enlighten and direct the policy of future legiſlators? The diſcuſſion, however, to which this queſtion leads, is of ſingular difficulty; as it requires an accurate analyſis of by far the moſt complicated claſs of phenomena that can poſſibly engage our attention; thoſe which reſult from the intricate and often the imperceptible mechaniſm of political ſociety;—a ſubject of obſervation which ſeems, at firſt view, ſo little commenſurate to our faculties, that it has been generally regarded with the ſame paſſive emotions of wonder and ſubmiſſion, with which, in the material world, we

* The length to which this Memoir has already extended, together with ſome other reaſons which it is unneceſſary to mention here, have induced me, in printing the following ſection, to confine myſelf to a much more general view of the ſubject than I once intended. See Note (D.)

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ſurvey the effects produced by the myſterious and uncontroulable operation of phyſical cauſes. It is fortunate that upon this, as upon many other occaſions, the difficulties which had long baffled the efforts of ſolitary genius begin to appear leſs formidable to the united exertions of the race; and that in proportion as the experience and the reaſonings of different individuals are brought to bear upon the ſame objects, and are combined in ſuch a manner as to illuſtrate and to limit each other, the ſcience of politics aſſumes more and more that ſyſtematical form which encourages and aids the labours of future enquirers.

In proſecuting the ſcience of politics on this plan, little aſſiſtance is to be derived from the ſpeculations of ancient philoſophers, the greater part of whom, in their political enquiries, confined their attention to a compariſon of the different forms of government, and to an examination of the proviſions they made for perpetuating their own exiſtence, and for extending the glory of the ſtate. It was reſerved for modern times to inveſtigate thoſe univerſal principles of juſtice and of expediency, which ought, under every form of government, to regulate the ſocial order; and of which the object is, to make as equitable a diſtribution as poſſible, among all the different members of a community, of the advantages ariſing from the political union.

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The invention of printing was perhaps necessary to prepare the way for these researches. In those departments of literature and of science, where genius finds within itself the materials of its labours; in poetry, in pure geometry, and in some branches of moral philosophy; the ancients have not only laid the foundations on which we are to build, but have left great and finished models for our imitation. But in physics, where our progress depends on an immense collection of facts, and on a combination of the accidental lights daily struck out in the innumerable walks of observation and experiment; and in politics, where the materials of our theories are equally scattered, and are collected and arranged with still greater difficulty, the means of communication afforded by the press have, in the course of two centuries, accelerated the progress of the human mind, far beyond what the most sanguine hopes of our predecessors could have imagined.

The progress already made in this science, inconsiderable as it is in comparison of what may be yet expected, has been sufficient to shew, that the happiness of mankind depends, not on the share which the people possesses, directly or indirectly, in the enactment of laws, but on the equity and expediency of the laws that are enacted. The share which the people possesses in the government is interest-

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ing chiefly to the ſmall number of men whoſe object is the attainment of political importance; but the equity and expediency of the laws are intereſting to every member of the community: and more eſpecially to thoſe whoſe perſonal inſignificance leaves them no encouragement, but what they derive from the general ſpirit of the government under which they live.

It is evident, therefore, that the moſt important branch of political ſcience is that which has for its object to aſcertain the philoſophical principles of juriſprudence; or (as Mr. Smith expreſſes it) to aſcertain "the "general principles which ought to run "through and be the foundation of the laws "of all nations*." In countries where the prejudices of the people are widely at variance with theſe principles, the political liberty which the conſtitution beſtows, only furniſhes them with the means of accompliſhing their own ruin: And if it were poſſible to ſuppoſe theſe principles completely realized in any ſyſtem of laws, the people would have little reaſon to complain, that they were not immediately inſtrumental in their enactment. The only infallible criterion of the excellence of any conſtitution is to be found in the detail of its municipal code; and the value which

* See the concluſion of his Theory of Moral Sentiments.

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wiſe men ſet on political freedom, ariſes chiefly from the facility it is ſuppoſed to afford, for the introduction of thoſe legiſlative improvements which the general intereſts of the community recommend.—I cannot help adding, that the capacity of a people to exerciſe political rights with utility to themſelves and to their country, preſuppoſes a diffuſion of knowledge and of good morals, which can only reſult from the previous operation of laws favourable to induſtry, to order, and to freedom.

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Of the truth of theſe remarks, enlightened politicians ſeem now to be in general convinced; for the moſt celebrated works which have been produced in the different countries of Europe, during the laſt thirty years, by Smith, Queſnai, Turgot, Campomanes, Beccaria, and others, have aimed at the improvement of ſociety,—not by delineating plans of new conſtitutions, but by enlightening the policy of actual legiſlators. Such ſpeculations, while they are more eſſentially and more extenſively uſeful than any others, have no tentency to unhinge eſtabliſhed inſtitutions, or to inflame the paſſions of the multitude. The improvements they recommend are to be effected by means too gradual and ſlow in their operation, to warm the imaginations of any but of the ſpeculative few; and in proportion as they are adopted, they conſolidate the po-

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litical fabric, and enlarge the basis upon which it rests.

To direct the policy of nations with respect to one most important class of its laws, those which form its system of political economy, is the great aim of Mr. Smith's *Inquiry*: And he has unquestionably had the merit of presenting to the world, the most comprehensive and perfect work that has yet appeared, on the general principles of any branch of legislation. The example which he has set will be followed, it is to be hoped, in due time, by other writers, for whom the internal policy of states furnishes many other subjects of discussion no less curious and interesting; and may accelerate the progress of that science which Lord Bacon has so well described in the following passage: "Finis et scopus quem leges "intueri, atque ad quem jussiones et sanc-"tiones suas dirigere debent, non alius est, "quam ut cives feliciter degant; id fiet, si "pietate et religione recte instituti; moribus "honesti; armis adversus hostes externos tuti; "legum auxilio adversus seditiones et privatas "injurias muniti; imperio et magistratibus "obsequentes; copiis et opibus locupletes et "florentes fuerint.——Certe cognitio ista ad "viros civiles proprie spectat; qui optime "nôrunt, quid ferat societas humana, quid "salus populi, quid æquitas naturalis, quid "gentium mores, quid rerumpublicarum for-

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" mæ diverſæ: ideoque poſſint de legibus, " ex principiis et præceptis tam æquitatis " naturalis, quam politices decernere. Quam- " obrem id nunc agatur, ut fontes juſtitiæ et " utilitatis publicæ petantur, et in ſingulis " juris partibus character quidam et idea " juſti exhibeatur, ad quam particularium " regnorum et rerumpublicarum leges pro- " bare, atque inde emendationem moliri, " quiſque, cui hoc cordi erit et curæ, poſſit." The enumeration contained in the foregoing paſſage, of the different objects of law, coincides very nearly with that given by Mr. Smith in the concluſion of his Theory of Moral Sentiments; and the preciſe aim of the political ſpeculations which he then announced, and of which he afterwards publiſhed ſo valuable a part in his Wealth of Nations, was to aſcertain the general principles of juſtice and of expediency, which ought to guide the inſtitutions of legiſlators on theſe important articles;—in the words of Lord Bacon, to aſcertain thoſe *leges legum*, " ex quibus informa- " tio peti poſſit, quid in ſingulis legibus bene " aut perperam poſitum aut conſtitutum ſit."

The branch of legiſlation which Mr. Smith has made choice of as the ſubject of his work, naturally leads me to remark a very ſtriking contraſt between the ſpirit of ancient and of modern policy in reſpect to the Wealth of

S. C. T. IV. Nations *. The great object of the former was to counteract the love of money and a taste for luxury, by positive institutions; and to maintain in the great body of the people, habits of frugality, and a severity of manners. The decline of states is uniformly ascribed by the philosophers and historians, both of Greece and Rome, to the influence of riches on national character; and the laws of Lycurgus, which, during a course of ages, banished the precious metals from Sparta, are proposed by many of them as the most perfect model of legislation devised by human wisdom.—How opposite to this is the doctrine of modern politicians! Far from considering poverty as an advantage to a state, their great aim is to open new sources of national opulence, and to animate the activity of all classes of the people, by a taste for the comforts and accommodations of life.

One principal cause of this difference between the spirit of ancient and modern policy, may be found in the difference between the sources of national wealth in ancient and in modern times. In ages when commerce and manufactures were yet in their infancy, and among states constituted like most of the ancient republics, a sudden influx of riches from

* Science de la Legislation, par le Chev. Filangieri. Liv. I. chap. 13.

abroad

abroad was juſtly dreaded as an evil, alarming to the morals, to the induſtry, and to the freedom of a people. So different, however, is the caſe at preſent, that the moſt wealthy nations are thoſe where the people are the moſt laborious, and where they enjoy the greateſt degree of liberty. Nay, it was the general diffuſion of wealth among the lower orders of men, which firſt gave birth to the ſpirit of independence in modern Europe, and which has produced under ſome of its governments, and eſpecially under our own, a more equal diffuſion of freedom and of happineſs than took place under the moſt celebrated conſtitutions of antiquity.

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Without this diffuſion of wealth among the lower orders, the important effects reſulting from the invention of printing would have been extremely limited; for a certain degree of eaſe and independence is neceſſary to inſpire men with the deſire of knowledge, and to afford them the leiſure which is requiſite for acquiring it; and it is only by the rewards which ſuch a ſtate of ſociety holds up to induſtry and ambition, that the ſelfiſh paſſions of the multitude can be intereſted in the intellectual improvement of their children. The extenſive propagation of light and refinement ariſing from the influence of the preſs, aided by the ſpirit of commerce, ſeems to be the remedy provided by nature, againſt the fatal

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effects which would otherwise be produced, by the subdivision of labour accompanying the progress of the mechanical arts: Nor is any thing wanting to make the remedy effectual, but wise institutions to facilitate general instruction, and to adapt the education of individuals to the stations they are to occupy. The mind of the artist, which, from the limited sphere of his activity, would sink below the level of the peasant or the savage, might receive in infancy the means of intellectual enjoyment, and the seeds of moral improvement; and even the insipid uniformity of his professional engagements, by presenting no object to awaken his ingenuity or to distract his attention, might leave him at liberty to employ his faculties, on subjects more interesting to himself, and more extensively useful to others.

These effects, notwithstanding a variety of opposing causes which still exist, have already resulted, in a very sensible degree, from the liberal policy of modern times. Mr. Hume, in his Essay on Commerce, after taking notice of the numerous armies raised and maintained by the small republics in the ancient world, ascribes the military power of these states to their want of commerce and luxury. "Few "artisans were maintained by the labour of "the farmers, and therefore more soldiers "might live upon it." He adds, however, that "the policy of ancient times was vio-

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"LENT, and contrary to the NATURAL courſe "of things;"—by which, I preſume, he means, that it aimed too much at modifying, by the force of poſitive inſtitutions, the order of ſociety, according to ſome preconceived idea of expediency; without truſting ſufficiently to thoſe principles of the human conſtitution, which, wherever they are allowed free ſcope, not only conduct mankind to happineſs, but lay the foundation of a progreſſive improvement in their condition and in their character. The advantages which modern policy poſſeſſes over the ancient, ariſe principally from its conformity, in ſome of the moſt important articles of political economy, to an order of things recommended by nature; and it would not be difficult to ſhew, that, where it remains imperfect, its errors may be traced to the reſtraints it impoſes on the natural courſe of human affairs. Indeed, in theſe reſtraints may be diſcovered the latent ſeeds of many of the prejudices and follies which infect modern manners, and which have ſo long bid defiance to the reaſonings of the philoſopher and the ridicule of the ſatiriſt.

The foregoing very imperfect hints appeared to me to form, not only a proper, but in ſome meaſure a neceſſary introduction to the few remarks I have to offer on Mr. Smith's Inquiry; as they tend to illuſtrate a connection between his ſyſtem of commercial politics,

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politics, and thoſe ſpeculations of his earlier years, in which he aimed more profeſſedly at the advancement of human improvement and happineſs. It is this view of political economy that can alone render it intereſting to the moraliſt, and can dignify calculations of profit and loſs in the eye of the philoſopher. Mr. Smith has alluded to it in various paſſages of his work, but he has nowhere explained himſelf fully on the ſubject; and the great ſtreſs he has laid on the effects of the diviſion of labour in increaſing its productive powers, ſeems, at firſt ſight, to point to a different and very melancholy concluſion;—that the ſame cauſes which promote the progreſs of the arts, tend to degrade the mind of the artiſt; and, of conſequence, that the growth of national wealth implies a ſacrifice of the character of the people.

The fundamental doctrines of Mr. Smith's ſyſtem are now ſo generally known, that it would have been tedious to offer any recapitulation of them in this place; even if I could have hoped to do juſtice to the ſubject, within the limits which I have preſcribed to myſelf at preſent. I ſhall content myſelf, therefore, with remarking, in general terms, that the great and leading object of his ſpeculations is, to illuſtrate the proviſion made by nature in the principles of the human mind, and in the circumſtances of man's external ſituation, for

for a gradual and progreſſive augmentation in the means of national wealth; and to demonſtrate, that the moſt effectual plan for advancing a people to greatneſs, is to maintain that order of things which nature has pointed out; by allowing every man, as long as he obſerves the rules of juſtice, to purſue his own intereſt in his own way, and to bring both his induſtry and his capital into the freeſt competition with thoſe of his fellow-citizens. Every ſyſtem of policy which endeavours, either by extraordinary encouragements to draw towards a particular ſpecies of induſtry a greater ſhare of the capital of the ſociety than what would naturally go to it, or, by extraordinary reſtraints, to force from a particular ſpecies of induſtry ſome ſhare of the capital which would otherwiſe be employed in it, is, in reality, ſubverſive of the great purpoſe which it means to promote.

What the circumſtances are, which, in modern Europe, have contributed to diſturb this order of nature, and, in particular, to encourage the induſtry of towns, at the expence of that of the country, Mr. Smith has inveſtigated with great ingenuity; and in ſuch a manner, as to throw much new light on the hiſtory of that ſtate of ſociety which prevails in this quarter of the globe. His obſervations on this ſubject tend to ſhew, that

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theſe circumſtances were, in their firſt origin, the natural and the unavoidable reſult of the peculiar ſituation of mankind during a certain period; and that they took their riſe, not from any general ſcheme of policy, but from the private intereſts and prejudices of particular orders of men.

The ſtate of ſociety, however, which at firſt aroſe from a ſingular combination of accidents, has been prolonged much beyond its natural period, by a falſe ſyſtem of political economy, propagated by merchants and manufacturers; a claſs of individuals, whoſe intereſt is not always the ſame with that of the public, and whoſe profeſſional knowledge gave them many advantages, more particularly in the infancy of this branch of ſcience, in defending thoſe opinions which they wiſhed to encourage. By means of this ſyſtem, a new ſet of obſtacles to the progreſs of national proſperity has been created. Thoſe which aroſe from the diſorders of the feudal ages, tended directly to diſturb the internal arrangements of ſociety, by obſtructing the free circulation of labour and of ſtock, from employment to employment, and from place to place. The falſe ſyſtem of political economy which has been hitherto prevalent, as its profeſſed object, has been to regulate the commercial intercourſe between different nations, has

has produced its effect in a way leſs direct and leſs manifeſt, but equally prejudicial to the ſtates that have adopted it.

On this ſyſtem, as it took its riſe from the prejudices, or rather from the intereſted views of mercantile ſpeculators, Mr. Smith beſtows the title of the Commercial or Mercantile Syſtem; and he has conſidered at great length its two principal expedients for enriching a nation; reſtraints upon importation, and encouragements to exportation. Part of theſe expedients, he obſerves, have been dictated by the ſpirit of monopoly, and part by a ſpirit of jealouſy againſt thoſe countries with which the balance of trade is ſuppoſed to be diſadvantageous. All of them appear clearly, from his reaſonings, to have a tendency unfavourable to the wealth of the nation which impoſes them.—His remarks with reſpect to the jealouſy of commerce are expreſſed in a tone of indignation, which he ſeldom aſſumes in his political writings.

"In this manner (ſays he) the ſneaking arts "of underling tradeſmen are erected into "political maxims for the conduct of a great "empire. By ſuch maxims as theſe, nations "have been taught that their intereſt conſiſted "in beggaring all their neighbours. Each "nation has been made to look with an in-"vidious eye upon the proſperity of all the "nations with which it trades, and to con-

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"ſider their gain as its own loſs. Commerce, "which ought naturally to be among nations "as among individuals, a bond of union and "friendſhip, has become the moſt fertile "ſource of diſcord and animoſity. The capri- "cious ambition of Kings and Miniſters has "not, during the preſent and the preceding "century, been more fatal to the repoſe of "Europe, than the impertinent jealouſy of "merchants and manufacturers. The vio- "lence and injuſtice of the rulers of mankind "is an ancient evil, for which perhaps the "nature of human affairs can ſcarce admit of "a remedy. But the mean rapacity, the "monopolizing ſpirit of merchants and ma- "nufacturers, who neither are nor ought to "be the rulers of mankind, though it cannot "perhaps be corrected, may very eaſily be "prevented from diſturbing the tranquillity "of any body but themſelves."

Such are the liberal principles which, according to Mr. Smith, ought to direct the commercial policy of nations; and of which it ought to be the great object of legiſlators to facilitate the eſtabliſhment. In what manner the execution of the theory ſhould be conducted in particular inſtances, is a queſtion of a very different nature, and to which the anſwer muſt vary, in different countries, according to the different circumſtances of the caſe. In a ſpeculative work, ſuch as Mr. Smith's,

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Smith's, the conſideration of this queſtion did not fall properly under his general plan; but that he was abundantly aware of the danger to be apprehended from a raſh application of political theories, appears not only from the general ſtrain of his writings, but from ſome incidental obſervations which he has expreſsly made upon the ſubject. "So unfortunate "(ſays he, in one paſſage) are the effects of "all the regulations of the mercantile ſyſtem, "that they not only introduce very dan-"gerous diſorders into the ſtate of the body "politic, but diſorders which it is often diffi-"cult to remedy, without occaſioning, for a "time at leaſt, ſtill greater diſorders.—In what "manner, therefore, the natural ſyſtem of "perfect liberty and juſtice ought gradually "to be reſtored, we muſt leave to the wiſdom "of future ſtateſmen and legiſlators to de-"termine." In the laſt edition of his Theory of moral Sentiments, he has introduced ſome remarks, which have an obvious reference to the ſame important doctrine. The following paſſage ſeems to refer more particularly to thoſe derangements of the ſocial order which derived their origin from the feudal inſtitutions:

"The man whoſe public ſpirit is prompted "altogether by humanity and benevolence, "will reſpect the eſtabliſhed powers and "privileges even of individuals, and ſtill more

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"of the great orders and ſocieties into which "the ſtate is divided. Though he ſhould "conſider ſome of them as in ſome meaſure "abuſive, he will content himſelf with mode-"rating, what he often cannot annihilate "without great violence. When he cannot "conquer the rooted prejudices of the people "by reaſon and perſuaſion, he will not at-"tempt to ſubdue them by force; but will "religiouſly obſerve what, by Cicero, is juſtly "called the divine maxim of Plato, never "to uſe violence to his country no more than "to his parents. He will accommodate, as "well as he can, his public arrangements to "the confirmed habits and prejudices of the "people; and will remedy, as well as he can, "the inconveniencies which may flow from "the want of thoſe regulations which the "people are averſe to ſubmit to. When he "cannot eſtabliſh the right, he will not diſ-"dain to ameliorate the wrong; but, like "Solon, when he cannot eſtabliſh the beſt "ſyſtem of laws, he will endeavour to "eſtabliſh the beſt that the people can "bear."

Theſe cautions with reſpect to the practical application of general principles were peculiarly neceſſary from the Author of "The "Wealth of Nations;" as the unlimited freedom of trade, which it is the chief aim of his work to recommend, is extremely apt,

apt, by flattering the indolence of the ſtateſman, to ſuggeſt to thoſe who are inveſted with abſolute power, the idea of carrying it into immediate execution. " Nothing is more " adverſe to the tranquillity of a ſtateſman " (ſays the author of an Eloge on the Ad- " miniſtration of Colbert) than a ſpirit of " moderation; becauſe it condemns him to " perpetual obſervation, ſhews him every mo- " ment the inſufficiency of his wiſdom, and " leaves him the melancholy ſenſe of his " own imperfection; while, under the ſhelter " of a few general principles, a ſyſtematical " politician enjoys a perpetual calm. By the " help of one alone, that of a perfect liberty " of trade, he would govern the world, " and would leave human affairs to arrange " themſelves at pleaſure, under the opera- " tion of the prejudices and the ſelf-intereſts " of individuals.. If theſe run counter to " each other, he gives himſelf no anxiety " about the conſequence; he inſiſts that the " reſult cannot be judged of till after a cen- " tury or two ſhall have elapſed. If his con- " temporaries, in conſequence of the diſorder " into which he has thrown public affairs, " are ſcrupulous about ſubmitting quietly to " the experiment, he accuſes them of im- " patience. They alone, and not he, are " to blame for what they have ſuffered; and " the principle continues to be inculcated

T. " with the ſame zeal and the ſame confidence " as before." Theſe are the words of the ingenious and eloquent author of the Eloge on Colbert, which obtained the prize from the French Academy in the year 1763; a performance which, although confined and erroneous in its ſpeculative views, abounds with juſt and important reflections of a practical nature. How far his remarks apply to that particular claſs of politicians whom he had evidently in his eye in the foregoing paſſage, I ſhall not preſume to decide.

It is hardly neceſſary for me to add to theſe obſervations, that they do not detract in the leaſt from the value of thoſe political theories which attempt to delineate the principles of a perfect legiſlation. Such theories (as I have elſewhere obſerved*) ought to be conſidered merely as deſcriptions of the *ultimate* objects at which the ſtateſman ought to aim. The tranquillity of his adminiſtration, and the immediate ſucceſs of his meaſures, depend on his good ſenſe and his practical ſkill; and his theoretical principles only enable him to direct his meaſures ſteadily and wiſely, to promote the improvement and happineſs of mankind, and prevent him from being ever led aſtray from theſe important ends, by more limited views of temporary expedience. " In all

* Elements of the Philoſophy of the Human Mind, p. 261.

" caſes

"cases (says Mr. Hume) it must be advantageous to know what is most perfect in the kind, that we may be able to bring any real constitution or form of government as near it as possible, by such gentle alterations and innovations as may not give too great disturbance to society."

The limits of this Memoir make it impossible for me to examine particularly the merit of Mr. Smith's work in point of originality. That his doctrine concerning the freedom of trade and of industry coincides remarkably with that which we find in the writings of the French Economists, appears from the slight view of their system which he himself has given. But it surely cannot be pretended by the warmest admirers of that system, that any one of its numerous expositors has approached to Mr. Smith in the precision and perspicuity with which he has stated it, or in the scientific and luminous manner in which he has deduced it from elementary principles. The awkwardness of their technical language, and the paradoxical form in which they have chosen to present some of their opinions, are acknowledged, even by those who are most willing to do justice to their merits; whereas it may be doubted, with respect to Mr. Smith's Inquiry, if there exists any book beyond the circle of the mathematical and physical

T. ſciences, which is at once ſo agreeable in its arrangement to the rules of a ſound logic, and ſo acceſſible to the examination of ordinary readers. Abſtracting entirely from the author's peculiar and original ſpeculations, I do not know that, upon any ſubject whatever, a work has been produced in our times, containing ſo methodical, ſo comprehenſive, and ſo judicious a digeſt of all the moſt profound and enlightened philoſophy of the age*.

In juſtice alſo to Mr. Smith, it muſt be obſerved, that although ſome of the economical writers had the ſtart of him in publiſhing their doctrines to the world, theſe doctrines appear, with reſpect to him, to have been altogether original, and the reſult of his own reflections. Of this, I think, every perſon muſt be convinced, who reads the Inquiry with due attention, and is at pains to examine the gradual and beautiful progreſs of the author's ideas: But in caſe any doubt ſhould remain on this head, it may be proper to mention, that Mr. Smith's political lectures, comprehending the fundamental principles of his Inquiry, were delivered at Glaſgow as early as the year 1752 or 1753; at a period, ſurely, when there exiſted no French performance on the ſubject, that could be of much uſe to

* Note (E.)

him

him in guiding his researches *. In the year 1756, indeed, M. Turgot (who is said to have imbibed his first notions concerning the unlimited freedom of commerce from an old merchant, M. Gournay), published in the *Encyclopedie*, an article which sufficiently shews how completely his mind was emancipated from the old prejudices in favour of commercial regulations: But that even then, these opinions were confined to a few speculative men in France, appears from a passage in the *Mémoires sur la Vie et les Ouvrages de M. Turgot;* in which, after a short quotation from the article just mentioned, the author adds: "These ideas were *then* considered "as paradoxical; they are since become "common, and they will one day be adopted "universally."

The Political Discourses of Mr. Hume were evidently of greater use to Mr. Smith, than any other book that had appeared prior to his lectures. Even Mr. Hume's theories, however, though always plausible and ingenious, and in most instances profound and just, involve some fundamental mistakes; and, when compared with Mr. Smith's, afford a

* In proof of this, it is sufficient for me to appeal to a short history of the progress of political economy in France, published in one of the volumes of *Ephemerides du Citoyen*. See the first part of the volume for the year 1769. The paper is entitled, *Notice abrégée des différens Ecrits modernes, qui ont concourou en France à former la Science de l'Economie Politique.*

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ſtriking proof, that, in conſidering a ſubject ſo extenſive and ſo complicated, the moſt penetrating ſagacity, if directed only to particular queſtions, is apt to be lead aſtray by firſt appearances; and that nothing can guard us effectually againſt error, but a comprehenſive ſurvey of the whole field of diſcuſſion, aſſiſted by an accurate and patient analyſis of the ideas about which our reaſonings are employed.—It may be worth while to add, that Mr. Hume's Eſſay "on the Jealouſy of "Trade," with ſome other of his Political Diſcourſes, received a very flattering proof of M. Turgot's approbation, by his undertaking the taſk of tranſlating them into the French language*.

I am aware that the evidence I have hitherto produced of Mr. Smith's originality may be objected to as not perfectly deciſive, as it reſts entirely on the recollection of thoſe ſtudents who attended his firſt courſes of moral philoſophy at Glaſgow; a recollection which, at the diſtance of forty years, cannot be ſuppoſed to be very accurate. There exiſts, however, fortunately, a ſhort manuſcript, drawn up by Mr. Smith in the year 1755, and preſented by him to a Society of which he was then a member; in which paper, a pretty long enumeration is given of certain leading prin-

* Note (F.)

ciples,

ciples, both political and literary, to which he was anxious to eſtabliſh his excluſive right; in order to prevent the poſſibility of ſome rival claims which he thought he had reaſon to apprehend, and to which his ſituation as a profeſſor, added to his unreſerved communications in private companies, rendered him peculiarly liable. This paper is at preſent in my poſſeſſion. It is expreſſed with a good deal of that honeſt and indignant warmth, which is perhaps unavoidable by a man who is conſcious of the purity of his own intentions, when he ſuſpects that advantages have been taken of the frankneſs of his temper. On ſuch occaſions, due allowances are not always made for thoſe plagiariſms, which, however cruel in their effects, do not neceſſarily imply bad faith in thoſe who are guilty of them; for the bulk of mankind, incapable themſelves of original thought, are perfectly unable to form a conception of the nature of the injury done to a man of inventive genius, by encroaching on a favourite ſpeculation. For reaſons known to ſome members of this Society, it would be improper, by the publication of this manuſcript, to revive the memory of private differences; and I ſhould not have even alluded to it, if I did not think it a valuable document of the progreſs of Mr. Smith's political ideas at a very early period. Many of the moſt important opinions in *The*

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T. *Wealth of Nations* are there detailed; but I ſhall quote only the following ſentences: " Man is generally conſidered by ſtateſmen " and projectors as the materials of a ſort of " political mechanics. Projectors diſturb " nature in the courſe of her operations in " human affairs; and it requires no more " than to let her alone, and give her fair " play in the purſuit of her ends, that ſhe " may eſtabliſh her own deſigns."—And in another paſſage: " Little elſe is requiſite to " carry a ſtate to the higheſt degree of opu- " lence from the loweſt barbariſm, but peace, " eaſy taxes, and a tolerable adminiſtration " of juſtice; all the reſt being brought about " by the natural courſe of things. All go- " vernments which thwart this natural courſe, " which force things into another channel, " or which endeavour to arreſt the progreſs " of ſociety at a particular point, are unna- " tural, and to ſupport themſelves are obliged " to be oppreſſive and tyrannical.—A great " part of the opinions (he obſerves) enume- " rated in this paper, is treated of at length in " ſome lectures which I have ſtill by me, and " which were written in the hand of a clerk " who left my ſervice ſix years ago. They " have all of them been the conſtant ſubjects " of my lectures ſince I firſt taught Mr. " Cragie's claſs, the firſt winter I ſpent in " Glaſgow, down to this day, without any

" confi-

"confiderable variation. They had all of them been the fubjects of lectures which I read at Edinburgh the winter before I left it, and I can adduce innumerable witneffes, both from that place and from this, who will afcertain them fufficiently to be mine."

After all, perhaps, the merit of fuch a work as Mr. Smith's is to be eftimated lefs from the novelty of the principles it contains, than from the reafonings employed to fupport thefe principles, and from the fcientific manner in which they are unfolded in their proper order and connection. General affertions with refpect to the advantages of a free commerce, may be collected from various writers of an early date. But in queftions of fo complicated a nature as occur in political economy, the credit of fuch opinions belongs of right to the author who firft eftablifhed their folidity, and followed them out to their remote confequences; not to him who, by a fortunate accident, firft ftumbled on the truth.

Befides the principles which Mr. Smith confidered as more peculiarly his own, his Inquiry exhibits a fyftematical view of the moft important articles of political economy, fo as to ferve the purpofe of an elementary treatife on that very extenfive and difficult fcience. The fkill and the comprehenfivenefs of mind difplayed in his arrangement, can be judged of by

SECT. IV. by thoſe alone who have compared it with that adopted by his immediate predeceſſors. And perhaps, in point of utility, the labour he has employed in connecting and methodizing their ſcattered ideas, is not leſs valuable than the reſults of his own original ſpeculations: For it is only when digeſted in a clear and natural order, that truths make their proper impreſſions on the mind, and that erroneous opinions can be combated with ſucceſs.

It does not belong to my preſent undertaking (even if I were qualified for ſuch a taſk) to attempt a ſeparation of the ſolid and important doctrines of Mr. Smith's book from thoſe opinions which appear exceptionable or doubtful. I acknowledge, that there are ſome of his concluſions to which I would not be underſtood to ſubſcribe implicitly; more particularly in that chapter, where he treats of the principles of taxation; a ſubject, which he has certainly examined in a manner more looſe and unſatisfactory than moſt of the others which have fallen under his review*.

It would be improper for me to conclude this ſection without taking notice of the manly and dignified freedom with which the author uniformly delivers his opinions, and of the ſuperiority which he diſcovers through-

* Note (G.)

out,

out, to all the little paſſions connected with the factions of the times in which he wrote. Whoever takes the trouble to compare the general tone of his compoſition with the period of its firſt publication, cannot fail to feel and acknowledge the force of this remark.—It is not often that a diſintereſted zeal for truth has ſo ſoon met with its juſt reward. Philoſophers (to uſe an expreſſion of Lord Bacon's) are "the ſervants of poſterity;" and moſt of thoſe who have devoted their talents to the beſt intereſts of mankind, have been obliged, like Bacon, to "bequeath their fame" to a race yet unborn, and to conſole themſelves with the idea of ſowing what another generation was to reap:

Inſere Daphni pyros, carpent tua poma nepotes.

Mr. Smith was more fortunate; or rather, in this reſpect, his fortune was ſingular. He ſurvived the publication of his work only fifteen years; and yet, during that ſhort period, he had not only the ſatisfaction of ſeeing the oppoſition it at firſt excited, gradually ſubſide, but to witneſs the practical influence of his writings on the commercial policy of his country.

SECT.

SECT. V.

Conclusion of the Narrative.

T. ABOUT two years after the publication of "The Wealth of Nations," Mr. Smith was appointed one of the Commiſſioners of His Majeſty's Cuſtoms in Scotland; a preferment which, in his eſtimation, derived an additional value from its being beſtowed on him at the requeſt of the Duke of Buccleuch. The greater part of theſe two years he paſſed in London, enjoying a ſociety too extenſive and varied to afford him any opportunity of indulging his taſte for ſtudy. His time, however, was not loſt to himſelf; for much of it was ſpent with ſome of the firſt names in Engliſh literature. Of theſe no unfavourable ſpecimen is preſerved by Dr. Barnard, in his well-known "Verſes addreſſed to Sir Joſhua "Reynolds and his friends."

If I have thoughts, and can't expreſs 'em,
Gibbon ſhall teach me how to dreſs 'em
In words ſelect and terſe:
Jones teach me modeſty and Greek,
Smith how to think, Burke how to ſpeak,
And Beauclerc to converſe*.

In conſequence of Mr. Smith's appointment to the Board of Cuſtoms, he removed,

* See Annual Regiſter for the year 1776.

in

in 1778, to Edinburgh, where he ſpent the laſt twelve years of his life; enjoying an affluence which was more than equal to all his wants; and, what was to him of ſtill greater value, the proſpect of paſſing the remainder of his days among the companions of his youth.

His mother, who, though now in extreme old age, ſtill poſſeſſed a conſiderable degree of health, and retained all her faculties unimpaired, accompanied him to town; and his couſin Miſs Jane Douglas (who had formerly been a member of his family at Glaſgow, and for whom he had always felt the affection of a brother) while ſhe divided with him thoſe tender attentions which her aunt's infirmities required, relieved him of a charge for which he was peculiarly ill qualified, by her friendly ſuperintendence of his domeſtic economy.

The acceſſion to his income which his new office brought him, enabled him to gratify, to a much greater extent than his former circumſtances admitted of, the natural generoſity of his diſpoſition; and the ſtate of his funds at the time of his death, compared with his very moderate eſtabliſhment, confirmed, beyond a doubt, what his intimate acquaintances had often ſuſpected, that a large proportion of his annual ſavings was allotted to offices of ſecret charity. A ſmall, but excellent library, which he had gradually formed with

T. with great judgment in the ſelection; and a ſimple, though hoſpitable table, where, without the formality of an invitation, he was always happy to receive his friends, were the only expences that could be conſidered as his own *.

The change in his habits which his removal to Edinburgh produced, was not equally favourable to his literary purſuits. The duties of his office, though they required but little exertion of thought, were yet ſufficient to waſte his ſpirits and to diſſipate his attention; and now that his career is cloſed, it is impoſſible to reflect on the time they conſumed, without lamenting, that it had not been employed in labours more profitable to the world, and more equal to his mind.

During the firſt years of his reſidence in this city, his ſtudies ſeemed to be entirely ſuſpended; and his paſſion for letters ſerved only to amuſe his leiſure, and to animate his converſation. The infirmities of age, of which he very early began to feel the approaches, reminded him at laſt, when it was too late,

* Some very affecting inſtances of Mr. Smith's beneficence, in caſes where he found it impoſſible to conceal entirely his good offices, have been mentioned to me by a near relation of his, and one of his moſt confidential friends, Miſs Roſs, daughter of the late Patrick Roſs, Eſq. of Innernethy. They were all on a ſcale much beyond what might have been expected from his fortune; and were accompanied with circumſtances equally honourable to the delicacy of his feelings and the liberality of his heart.

of what he yet owed to the public, and to his own fame. The principal materials of the works which he had announced, had been long ago collected; and little probably was wanting, but a few years of health and retirement, to beſtow on them that ſyſtematical arrangement in which he delighted; and the ornaments of that flowing, and apparently artleſs ſtyle, which he had ſtudiouſly cultivated, but which, after all his experience in compoſition, he adjuſted, with extreme difficulty, to his own taſte *.

The death of his mother in 1784, which was followed by that of Miſs Douglas in 1788, contributed, it is probable, to fruſtate theſe projects. They had been the objects of his affection for more than ſixty years; and in their ſociety he had enjoyed, from his infancy, all that he ever knew of the endearments of a family. He was now alone, and helpleſs; and, though he bore his loſs with

* Mr. Smith obſerved to me, not long before his death, that after all his practice in writing, he compoſed as ſlowly, and with as great difficulty, as at firſt. He added, at the ſame time, that Mr. Hume had acquired ſo great a facility in this reſpect, that the laſt volumes of his Hiſtory were printed from his original copy, with a few marginal corrections.'

It may gratify the curioſity of ſome readers to know, that when Mr. Smith was employed in compoſition, he generally walked up and down his apartment, dictating to a ſecretary. All Mr. Hume's works (I have been aſſured) were written with his own hand. A critical reader may, I think, perceive in the different ſtyles of theſe two claſſical writers, the effects of their different modes of ſtudy.

equani-

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equanimity, and regained apparently his former cheerfulneſs, yet his health and ſtrength gradually declined till the period of his death, which happened in July 1790, about two years after that of his couſin, and ſix after that of his mother. His laſt illneſs, which aroſe from a chronic obſtruction in his bowels, was lingering and painful; but had every conſolation to ſooth it which he could derive from the tendereſt ſympathy of his friends, and from the complete reſignation of his own mind.

A few days before his death, finding his end approach rapidly, he gave orders to deſtroy all his manuſcripts, excepting ſome detached eſſays, which he entruſted to the care of his executors; and they were accordingly committed to the flames. What were the particular contents of theſe papers, is not known even to his moſt intimate friends; but there can be no doubt that they conſiſted, in part, of the lectures on rhetoric, which he read at Edinburgh in the year 1748, and of the lectures on natural religion and on juriſprudence, which formed part of his courſe at Glaſgow. That this irreparable injury to letters proceeded, in ſome degree, from an exceſſive ſolicitude in the author about his poſthumous reputation, may perhaps be true; but with reſpect to ſome of his manuſcripts, may we not ſuppoſe, that he was influenced by

by higher motives? It is but ſeldom that a philoſopher, who has been occupied from his youth with moral or with political inquiries, ſucceeds completely to his wiſh in ſtating to others, the grounds upon which his own opinions are founded; and hence it is, that the known principles of an individual, who has approved to the public his candour, his liberality, and his judgment, are entitled to a weight and an authority, independent of the evidence which he is able, upon any particular occaſion, to produce in their ſupport. A ſecret conſciouſneſs of this circumſtance, and an apprehenſion that, by not doing juſtice to an important argument, the progreſs of truth may be rather retarded than advanced, have probably induced many authors to withhold from the world the unfiniſhed reſults of their moſt valuable labours; and to content themſelves with giving the general ſanction of their ſuffrages to truths which they regarded as peculiarly intereſting to the human race *.

The

* Since writing the above, I have been favoured by Dr. Hutton with the following particulars:

"Some time before his laſt illneſs, when Mr. Smith had occaſion to go to London, he enjoined his friends, to whom he had entruſted the diſpoſal of his manuſcripts, that, in the event of his death, they ſhould deſtroy all the volumes of his lectures, doing with the reſt of his manuſcripts what they pleaſed. When now he had become weak, and ſaw the approaching period of his life, he ſpoke to his friends again upon the ſame ſubject. They entreated him to make his mind eaſy, as he might depend upon their fulfilling his deſire. He was then ſatisfied. But ſome days afterwards,

SECT. V. The additions to the Theory of Moral Sentiments, moſt of which were compoſed under ſevere

afterwards, finding his anxiety not entirely removed, he begged one of them to deſtroy the volumes immediately. This accordingly was done; and his mind was ſo much relieved, that he was able to receive his friends in the evening with his uſual complacency.

"They had been in uſe to ſup with him every Sunday; and that evening there was a pretty numerous meeting of them. Mr. Smith not finding himſelf able to ſit up with them as uſual, retired to bed before ſupper; and, as he went away, took leave of his friends by ſaying, 'I believe we muſt adjourn this meeting to ſome other place.' He died a very few days afterwards."

Mr. Riddel, an intimate friend of Mr. Smith's, who was preſent at one of the converſations on the ſubject of the manuſcripts, mentioned to me, in addition to Dr. Hutton's note, that Mr. Smith regretted "he had done ſo little." "But I meant (ſaid he) to have done more; and there are materials in my papers, of which I could have made a great deal. But that is now out of the queſtion."

That the idea of deſtroying ſuch unfiniſhed works as might be in his poſſeſſion at the time of his death, was not the effect of any ſudden or haſty reſolution, appears from the following letter to Mr. Hume, written by Mr. Smith in 1773, at a time when he was preparing himſelf for a journey to London, with the proſpect of a pretty long abſence from Scotland.

My dear Friend, *Edinburgh*, 16*th April* 1773.

As I have left the care of all my literary papers to you, I muſt tell you, that except thoſe which I carry along with me, there are none worth the publication, but a fragment of a great work, which contains a hiſtory of the aſtronomical ſyſtems that were ſucceſſively in faſhion down to the time of Des Cartes. Whether that might not be publiſhed as a fragment of an intended juvenile work, I leave entirely to your judgment, though I begin to ſuſpect myſelf that there is more refinement than ſolidity in ſome parts of it. This little work you will find in a thin folio paper book in my back room. All the other looſe papers which you will find in that deſk, or within the glaſs folding doors of a beaureau which ſtands in my bed-room, together with about eighteen thin paper folio books, which you will likewiſe find within the ſame

ſevere diſeaſe, had fortunately been ſent to the preſs in the beginning of the preceding winter; and the author lived to ſee the publication of the work. The moral and ſerious ſtrain that prevails through theſe additions, when connected with the circumſtance of his declining health, adds a peculiar charm to his pathetic eloquence, and communicates a new intereſt, if poſſible, to thoſe ſublime truths, which, in the academical retirement of his youth, awakened the firſt ardours of his genius, and on which the laſt efforts of his mind repoſed.

In a letter addreſſed, in the year 1787, to the Principal of the Univerſity of Glaſgow, in conſequence of being elected Rector of that learned body, a pleaſing memorial remains of the ſatisfaction with which he always recollected that period of his literary career, which had been more peculiarly conſecrated to theſe important ſtudies. " No preferment (ſays he) " could have given me ſo much real " ſatisfaction. No man can owe greater ob- " ligations to a ſociety than I do to the Uni- " verſity of Glaſgow. They educated me;

ſame glass folding doors, I deſire may be deſtroyed without any examination. Unleſs I die very ſuddenly, I ſhall take care that the papers I carry with me ſhall be carefully ſent to you.

I ever am, my dear Friend, moſt faithfully your's,

ADAM SMITH.

To David Hume, Eſq.
St. Andrew's Square.

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"they ſent me to Oxford. Soon after my re-
"turn to Scotland, they elected me one of
"their own members; and afterwards pre-
"ferred me to another office, to which the
"abilities and virtues of the never to be for-
"gotten Dr. Hutcheſon had given a ſuperior
"degree of illuſtration. The period of thir-
"teen years which I ſpent as a member of
"that ſociety, I remember as by far the moſt
"uſeful, and therefore as by far the happieſt
"and moſt honourable period of my life; and
"now, after three and twenty years abſence,
"to be remembered in ſo very agreeable a
"manner by my old friends and protectors,
"gives me a heart-felt joy which I cannot
"eaſily expreſs to you."

The ſhort narrative which I have now finiſhed, however barren of incident, may convey a general idea of the genius and character of this illuſtrious Man. Of the intellectual gifts and attainments by which he was ſo eminently diſtinguiſhed;—of the originality and comprehenſiveneſs of his views; the extent, the variety, and the correctneſs of his information; the inexhauſtible fertility of his invention; and the ornaments which his rich and beautiful imagination had borrowed from claſſical culture; he has left behind him laſting monuments. To his private worth the moſt certain of all teſtimonies may be found in that confidence, reſpect, and attachment,

ment, which followed him through all the various relations of life. The ſerenity and gaiety he enjoyed, under the preſſure of his growing infirmities, and the warm intereſt he felt to the laſt, in every thing connected with the welfare of his friends, will be long remembered by a ſmall circle, with whom, as long as his ſtrength permitted, he regularly ſpent an evening in the week; and to whom the recollection of his worth ſtill forms a pleaſing, though melancholy bond of union.

The more delicate and characteriſtical features of his mind, it is perhaps impoſſible to trace. That there were many peculiarities, both in his manners, and in his intellectual habits, was manifeſt to the moſt ſuperficial obſerver; but although, to thoſe who knew him, theſe peculiarities detracted nothing from the reſpect which his abilities commanded; and although, to his intimate friends, they added an inexpreſſible charm to his converſation, while they diſplayed, in the moſt intereſting light, the artleſs ſimplicity of his heart; yet it would require a very ſkilful pencil to preſent them to the public eye. He was certainly not fitted for the general commerce of the world, or for the buſineſs of active life. The comprehenſive ſpeculations with which he had been occupied from his youth, and the variety of materials which his own invention continually ſupplied

SECT. V. to his thoughts, rendered him habitually inattentive to familiar objects, and to common occurrences; and he frequently exhibited instances of absence, which had scarcely been surpassed by the fancy of La Bruyere. Even in company, he was apt to be engrossed with his studies; and appeared, at times, by the motion of his lips, as well by his looks and gestures, to be in the fervour of composition. I have often, however, been struck, at the distance of years, with his accurate memory of the most trifling particulars; and am inclined to believe, from this and some other circumstances, that he possessed a power, not perhaps uncommon among absent men, of recollecting, in consequence of subsequent efforts of reflection, many occurrences, which, at the time when they happened, did not seem to have sensibly attracted his notice.

To the defect now mentioned, it was probably owing, in part, that he did not fall in easily with the common dialogue of conversation, and that he was somewhat apt to convey his own ideas in the form of a lecture. When he did so, however, it never proceeded from a wish to engross the discourse, or to gratify his vanity. His own inclination disposed him so strongly to enjoy in silence the gaiety of those around him, that his friends were often led to concert little schemes, in order to engage him in the discussions most likely to

intereſt him. Nor do I think I ſhall be accuſed of going too far, when I ſay, that he was ſcarcely ever known to ſtart a new topic himſelf, or to appear unprepared upon thoſe topics that were introduced by others. Indeed, his converſation was never more amuſing than when he gave a looſe to his genius, upon the very few branches of knowledge of which he only poſſeſſed the outlines.

The opinions he formed of men, upon a ſlight acquaintance, were frequently erroneous; but the tendency of his nature inclined him much more to blind partiality, than to ill-founded prejudice. The enlarged views of human affairs, on which his mind habitually dwelt, left him neither time nor inclination to ſtudy, in detail, the unintereſting peculiarities of ordinary characters; and accordingly, though intimately acquainted with the capacities of the intellect, and the workings of the heart, and accuſtomed, in his theories, to mark, with the moſt delicate hand, the niceſt ſhades, both of genius and of the paſſions; yet, in judging of individuals, it ſometimes happened, that his eſtimates were, in a ſurpriſing degree, wide of the truth.

The opinions, too, which, in the thoughtleſſneſs and confidence of his ſocial hours, he was accuſtomed to hazard on books, and on queſtions of ſpeculation, were not uniformly ſuch as might have been expected from the

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ſuperiority of his underſtanding, and the ſingular conſiſtency of his philoſophical principles. They were liable to be influenced by accidental circumſtances, and by the humour of the moment; and when retailed by thoſe who only ſaw him occaſionally, ſuggeſted falſe and contradictory ideas of his real ſentiments. On theſe, however, as on moſt other occaſions, there was always much truth, as well as ingenuity, in his remarks; and if the different opinions which at different times, he pronounced upon the ſame ſubject, had been all combined together, ſo as to modify and limit each other, they would probably have afforded materials for a deciſion, equally comprehenſive and juſt. But in the ſociety of his friends, he had no diſpoſition to form thoſe qualified concluſions that we admire in his writings; and he generally contented himſelf with a bold and maſterly ſketch of the object, from the firſt point of view in which his temper, or his fancy, preſented it. Something of the ſame kind might be remarked, when he attempted, in the flow of his ſpirits, to delineate thoſe characters which, from long intimacy, he might have been ſuppoſed to underſtand thoroughly. The picture was always lively, and expreſſive; and commonly bore a ſtrong and amuſing reſemblance to the original, when viewed under one particular aſpect; but ſeldom, perhaps, conveyed a juſt and complete

plete conception of it in all its dimenſions and proportions. — In a word, it was the fault of his unpremeditated judgments, to be too ſyſtematical, and two much in extremes.

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But, in whatever way theſe trifling peculiarities in his manners may be explained, there can be no doubt, that they were intimately connected with the genuine artleſſneſs of his mind. In this amiable quality, he often recalled to his friends, the accounts that are given of good La Fontaine; a quality which in him derived a peculiar grace from the ſingularity of its combination with thoſe powers of reaſon and of eloquence, which, in his political and moral writings, have long engaged the admiration of Europe.

In his external form and appearance, there was nothing uncommon. When perfectly at eaſe, and when warmed with converſation, his geſtures were animated, and not ungraceful; and in the ſociety of thoſe he loved, his features were often brightened with a ſmile of inexpreſſible benignity. In the company of ſtrangers, his tendency to abſence, and perhaps ſtill more his conſciouſneſs of this tendency, rendered his manner ſomewhat embarraſſed; — an effect which was probably not a little heightened by thoſe ſpeculative ideas of propriety, which his recluſe habits tended at once to perfect in his conception, and to diminiſh his power of realizing. He never

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ſat for his picture; but the medallion of Taſſie conveys an exact idea of his profile, and of the general expreſſion of his countenance.

His valuable library, together with the reſt of his property, was bequeathed to his couſin Mr. David Douglas, Advocate. In the education of this young gentleman, he had employed much of his leiſure; and it was only two years before his death (at a time when he could ill ſpare the pleaſure of his ſociety), that he had ſent him to ſtudy law at Glaſgow, under the care of Mr. Millar;—the ſtrongeſt proof he could give of his diſintereſted zeal for the improvement of his friend, as well as of the eſteem in which he held the abilities of that eminent Profeſſor.

The executors of his will were Dr. Black and Dr. Hutton; with whom he had long lived in habits of the moſt intimate and cordial friendſhip; and who, to the many other teſtimonies which they had given him of their affection, added the mournful office of witneſſing his laſt moments.

NOTES

TO THE

LIFE OF ADAM SMITH, LL.D.

NOTE (A), p. 405.

NOTES.

"OF this number were Mr. Oſwald of Dunikeir," &c.] — The late James Oſwald, Eſq. — for many years one of the moſt active, able, and public-ſpirited of our Scotiſh repreſentatives in Parliament. He was more particularly diſtinguiſhed by his knowledge in matters of finance, and by his attention to whatever concerned the commercial or the agricultural intereſts of the country. From the manner in which he is mentioned in a paper of Mr. Smith's which I have peruſed, he appears to have combined, with that detailed information which he is well known to have poſſeſſed as a ſtateſman and man of buſineſs, a taſte for the more general and philoſophical diſcuſſions of political economy. He lived in habits of great intimacy with Lord Kames and Mr. Hume; and was one of Mr. Smith's earlieſt and moſt confidential friends.

NOTE (B), p. 408.

"The lectures of the profound and eloquent Dr. "Hutcheſon," &c.] Thoſe who have derived their knowledge

knowledge of Dr. Hutcheſon ſolely from his publications, may, perhaps, be inclined to diſpute the propriety of the epithet *eloquent*, when applied to any of his compoſitions; more particularly, when applied to *the Syſtem of Moral Philoſophy*, which was publiſhed after his death, as the ſubſtance of his lectures in the Univerſity of Glaſgow. His talents, however, as a public ſpeaker, muſt have been of a far higher order than what he has diſplayed as a writer; all his pupils whom I have happened to meet with (ſome of them, certainly, very competent judges) having agreed exactly with each other in their accounts of the extraordinary impreſſion which they made on the minds of his hearers. I have mentioned, in the text, Mr. Smith as one of his warmeſt admirers; and to *his* name I ſhall take this opportunity of adding thoſe of the late Earl of Selkirk; the late Lord Preſident Miller; and the late Dr. Archibald Maclaine, the very learned and judicious tranſlator of Moſheim's Eccleſiaſtical Hiſtory. My father, too, who had attended Dr. Hutcheſon's lectures for ſeveral years, never ſpoke of them without much ſenſibility. On this occaſion we can only ſay, as Quinctilian has done of the eloquence of Hortenſius; "Apparet placuiſſe aliquid eo dicente, "quod legentes non invenimus."

Dr. Hutcheſon's Inquiry into our Ideas of Beauty and Virtue; his Diſcourſe on the Paſſions; and his Illuſtrations of the Moral Senſe, are much more ſtrongly marked with the characteriſtical features of his genius, than his poſthumous work. His great and deſerved fame, however, in this country, reſts *now* chiefly on the traditionary hiſtory of his academical lectures, which appear to have contributed very powerfully to diffuſe, in Scotland, that taſte for analytical diſcuſſion, and that ſpirit of liberal inquiry, to which the

the world is indebted for ſome of the moſt valuable productions of the eighteenth century.

NOTE (C*), p. 444.

According to the learned Engliſh tranſlator of "Ariſ-
"totle's Ethics and Politics," the general idea which
runs through Mr. Smith's Theory, was obviouſly
borrowed from the following paſſage of Polybius:
"From the union of the two ſexes, to which all are
"naturally inclined, children are born. When any of
"theſe, therefore, being arrived at perfect age, inſtead
"of yielding ſuitable returns of gratitude and aſſiſtance
"to thoſe by whom they have been bred, on the con-
"trary, attempt to injure them by words or actions,
"it is manifeſt that thoſe who behold the wrong, after
"having alſo ſeen the ſufferings and the anxious cares
"that were ſuſtained by the parents in the nouriſh-
"ment and education of their children, muſt be
"greatly offended and diſpleaſed at ſuch proceeding.
"For man, who among all the various kinds of ani-
"mals is alone endowed with the faculty of reaſon,
"cannot, like the reſt, paſs over ſuch actions: but will
"make reflection on what he ſees; and comparing
"likewiſe the future with the preſent, will not fail to
"expreſs his indignation at this injurious treatment;
"to which, as he foreſees, he may alſo, at ſome time,
"be expoſed. Thus again, when any one who has
"been ſuccoured by another in the time of danger,
"inſtead of ſhewing the like kindneſs to this bene-
"factor, endeavours at any time to deſtroy or hurt
"him; it is certain, that all men muſt be ſhocked by
"ſuch ingratitude, through ſympathy with the reſent-
"ment of their neighbour; and from an apprehenſion
"that the caſe may be their own. And from
"hence

S. " hence arifes, in the mind of every man, a certain
" *notion* of the nature and force of duty, in which con-
" fifts both the beginning and the end of juftice. In
" like manner, the man, who, in defence of others, is
" feen to throw himfelf the foremoft into every danger,
" and even to fuftain the fury of the fierceft animals,
" never fails to obtain the loudeft acclamations of
" applaufe and veneration from all the multitude;
" while he who fhews a different conduct is purfued
" with cenfure and reproach. And thus it is, that the
" people begin to difcern the nature of things honour-
" able and bafe, and in what confifts the difference
" between them; and to perceive that the former, on
" accouut of the advantage that attends them, are fit
" to be admired and imitated, and the latter to be
" detefted and avoided."

" The doctrine" (fays Dr. Gillies) " contained in
" this paffage is expanded by Dr. Smith into a theory
" of moral fentiments. But he departs from *his*
" *author*, in placing the perception of right and wrong,
" in fentiment or feeling, ultimately and fimply.——
" Polybius, on the contrary, maintains with Ariftotle,
" that thefe notions arife from reafon, or intellect,
" operating on affection or appetite; or, in other words,
" that the moral faculty is a compound, and may be
" refolved into two fimpler principles of the mind."—
(Gillies's Ariftotle, Vol. I. pp. 302, 303, 2d. Edit.)

The only expreffion I object to in the two preceding fentences, is the phrafe, *his author*, which has the the appearance of infinuating a charge of plagiarifm againft Mr. Smith; — a charge which, I am confident, he did not deferve; and to which the above extract does not, in my opinion, afford any plaufible colour. It exhibits, indeed, an inftance of a curious coincidence between two philofophers in their views of the fame fubject; and as fuch, I have no doubt that

Mr.

Mr. Smith himſelf would have remarked it, had it occurred to his memory, when he was writing his book. Of ſuch accidental coincidences between different minds, examples preſent themſelves every day to thoſe, who, after having drawn from their internal reſources all the lights they could ſupply on a particular queſtion, have the curioſity to compare their own concluſions with thoſe of their predeceſſors: And it is extremely worthy of obſervation, that, in proportion as any concluſion approaches to the truth, the number of previous approximations to it may be reaſonably expected to be multiplied.

In the caſe before us, however, the queſtion about originality is of little or no moment; for the peculiar merit of Mr. Smith's work does not lie in his general principle, but in the ſkilful uſe he has made of it to give a ſyſtematical arrangement to the moſt important diſcuſſions and doctrines of Ethics. In this point of view, the Theory of Moral Sentiments may be juſtly regarded as one of the moſt original efforts of the human mind in that branch of ſcience to which it relates; and even if we were to ſuppoſe that it was firſt ſuggeſted to the author by a remark of which the world was in poſſeſſion for two thouſand years before, this very circumſtance would only reflect a ſtronger luſtre on the novelty of his deſign, and on the invention and taſte diſplayed in its execution.

I have ſaid, in the text, that my own opinion about the foundation of morals does not agree with that of Mr. Smith; and I propoſe to ſtate, in another publication, the ground of my diſſent from his concluſions on that queſtion. At preſent, I ſhall only obſerve, that I conſider the defects of his Theory as originating rather in a *partial*, than in a *miſtaken* view of the ſubject; while, on ſome of the moſt eſſential points of ethics, it appears

NOTES. appears to me to approximate very nearly to a correct ſtatement of the truth. I muſt not omit to add, in juſtice to the author, that his zeal to ſupport his favourite ſyſtem never has led him to vitiate or miſrepreſent the phenomena which he has employed it to explain; and that the connected order which he has given to a multiplicity of iſolated facts, muſt facilitate greatly the ſtudies of any of his ſucceſſors who may hereafter proſecute the ſame inquiry, agreeably to the ſevere rules of the inductive logic.

After the paſſage which I have quoted in the beginning of this note, I hope I ſhall be pardoned if I expreſs my doubts whether the learned and ingenious writer has not, upon this, as well as on ſome other occaſions, allowed his partiality to the ancients to blind him a little too much to the merits of his contemporaries. Would not his laborious and intereſting reſearches into the remains of the Greek philoſophy, have been employed ſtill more uſefully in revealing to us the ſyſtems and diſcoveries to which our ſucceſſors may yet lay claim, than in conjectures concerning the origin of thoſe with which we are already acquainted? How does it happen that thoſe men of profound erudition, who can ſo eaſily trace every *paſt* improvement to the fountain-head of antiquity, ſhould not ſometimes amuſe themſelves, and inſtruct the world, by anticipating the *future* progreſs of the human mind.

In ſtudying the connection and *filiation* of ſucceſſive Theories, when we are at a loſs, in any inſtance, for a link to complete the continuity of philoſophical ſpeculation, it ſeems much more reaſonable to ſearch for it in the ſyſtems of the immediately preceding period, and in

in the enquiries which *then* occupied the public attention, than in detached ſentences, or accidental expreſſions gleaned from the relics of diſtant ages. It is thus only, that we can hope to ſeize the preciſe point of view, in which an author's ſubject firſt preſented itſelf to his attention; and to account, to our own ſatisfaction, from the particular aſpect under which he ſaw it, for the ſubſequent direction which was given to his curioſity. In following ſuch a plan, our object is not to detect plagiariſms, which we ſuppoſe men of genius to have intentionally concealed; but to fill up an apparent chaſm in the hiſtory of Science, by laying hold of the thread which inſenſibly guided the mind from one ſtation to another. By what eaſy and natural ſteps Mr. Smith's Theory aroſe from the ſtate of ethical diſcuſſion in Great Britain, when he began his literary career, I ſhall endeavour elſewhere to explain.

NOTES.

A late author, of taſte and learning, has written a pleaſing and inſtructive eſſay on the *Marks of Poetical Imitation*. The marks of *Philoſophical Plagiariſm*, are not leſs diſcernible by an unprejudiced and diſcriminating eye; and are eaſily ſeparable from that occaſional ſimilarity of thought and of illuſtration, which we may expect to meet with in writers of the moſt remote ages and countries, when employed in examining the ſame queſtions, or in eſtabliſhing the ſame truths.

As the foregoing obſervations apply with fully as great force to the Wealth of Nations, as to the Theory of Moral Sentiments, I truſt ſome allowance will be made for the length of this note *.

NOTE

* I ſhall have occaſion afterwards to vindicate Mr. Smith's claims to originality in the former of theſe works, againſt the pretenſions of ſome foreign writers. As I do not mean, however, to recur again to his alleged plagiariſms from the ancients, I ſhall introduce

NOTES.

NOTE (C), p. 467.

The Theory of Moral Sentiments does not ſeem to have attracted ſo much notice in France as might have been expected, till after the publication of the Wealth of Nations. Mr. Smith uſed to aſcribe this in part to the Abbé Blavet's tranſlation, which he thought was but indifferently executed. A better reaſon, however, may perhaps be found in the low and ſtationary condition of Ethical and Metaphyſical ſcience in that country, previous to the publication of the *Encyclopédie*. On this head I beg leave to tranſcribe a few ſentences from an anonymous paper of his own, printed in the Edinburgh Review for the year 1755. The remarks contained

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introduce here, though ſomewhat out of place, two ſhort quotations; from which it will appear, that the germ of his ſpeculations concerning national wealth, as well as concerning the principles of ethics, is (according to Dr. Gillies) to be found in the Greek philoſophers.

"By adopting Ariſtotle's principles on the ſubjects of exchangeable value, and of national wealth, Dr. Smith has reſcued the ſcience of political economy from many falſe ſubtilties and many groſs errors."—Vol. I. p. 377, 2d edit.

"The ſubject of money is treated above, Vol. I. p. 374, et ſeq. In that paſſage, compared with another in the Magna Moralia, we find the fundamental principles of the modern economiſts."—Vol. II. p. 43.

In reply to theſe obſervations, I have only to requeſt my readers to compare them with the well-known paſſage in the firſt book of Ariſtotle's Politics, with reſpect to the lawfulneſs of uſury. When we conſider how much the intereſt of money enters as an element into all our modern diſquiſitions concerning commercial policy, is it poſſible to imagine, that there ſhould be any thing more than the moſt general and fortuitous coincidence between the reaſonings of ſuch writers as Smith, or Hume, or Turgot; and thoſe of an author whoſe experience of the nature and effects of commerce was ſo limited, as to impreſs his mind with a conviction, that to receive a *premium* for the uſe of money was inconſiſtent with the rules of morality?

in

in them, so far as they are admitted to be just, tend strongly to confirm an observation which I have elsewhere quoted from D'Alembert, with respect to the literary taste of his countrymen. (See Philosophical Essays, p. 110, 111.) NOTES.

"The original and inventive genius of the English, "has not only discovered itself in Natural Philosophy, "but in morals, metaphysics, and part of the abstract "sciences. Whatever attempts have been made in "modern times towards improvement in this contentious and unprosperous philosophy, beyond what the "ancients have left us, have been made in England. "The meditations of Des Cartes excepted, I know "nothing in French that aims at being original on that "subject; for the philosophy of M. Regis, as well as "that of Father Malebranche, are but refinements on "the meditations of Des Cartes. But Mr. Hobbes, "Mr. Locke, and Dr. Mandeville, Lord Shaftesbury, "Dr. Butler, Dr. Clarke, and Mr. Hutcheson, have "all of them, according to their different and inconsistent systems, endeavoured at least, to be, in some "measure, original; and to add something to that "stock of observations with which the world had been "furnished before them. This branch of the English "Philosophy, which seems now to be entirely neglected "by the English themselves, has, *of late*, been transported into France. I observe some traces of it, not "only in the *Encyclopédie*, but in the Theory of agreeable sentiments by M. de Pouilly, a work that is in "many respects original; and above all, in the late Discourse upon the origin and foundation of the inequality amongst mankind, by M. Rousseau of Geneva."

A new translation of Mr. Smith's Theory, (including his last additions,) was published at Paris in 1798 by

NOTES. Madame de Condorcet, with ſome ingenious letters on Sympathy annexed to it, written by the tranſlator.

NOTE (D), p. 479

By way of explanation of what is hinted at in the foot-note, p. 479, I think it proper for me *now* to add, that at the period when this memoir was read before the Royal Society of Edinburgh, it was not unuſual, even among men of ſome talents and information, to confound, ſtudiouſly, the ſpeculative doctrines of Political Economy, with thoſe diſcuſſions concerning the firſt principles of Government which happened unfortunately at that time to agitate the public mind. The doctrine of a Free Trade was itſelf repreſented as of a revolutionary tendency; and ſome who had formerly prided themſelves on their intimacy with Mr. Smith, and on their zeal for the propagation of his liberal ſyſtem, began to call in queſtion the expediency of ſubjecting to the diſputations of philoſophers, the arcana of State Policy, and the unfathomable wiſdom of the feudal ages. In reprinting this Section at preſent, I have, from obvious motives, followed ſcrupulouſly the text of the firſt edition, without any alterations or additions whatſoever; reſerving any comments and criticiſms which I have to offer on Mr. Smith's work, for a diſferent publication. (1810.)

NOTE (E), p. 500

Notwithſtanding the unqualified praiſe I have beſtowed, in the text, on Mr. Smith's arrangement, I readily admit, that ſome of his incidental diſcuſſions and digreſſions might have been more ſkilfully and happily incorporated with his general deſign. Little

ſtreſs, however, will be laid on blemiſhes of this ſort, by thoſe who are aware of the extreme difficulty of giving any thing like a ſyſtematic ſhape to reſearches ſo various, and, at firſt view, ſo unconnected, as his plan embraces:—Some of them having for their aim to eſtabliſh abſtract principles of univerſal application; and others bearing a particular reference to the circumſtances and policy of our own country.——It ought to be remembered, beſides, how much our taſte, in matters of arrangement, is liable to be influenced by our individual habits of thought; by the accidental conduct of our early ſtudies; and by other circumſtances which may be expected to preſent the ſame objects under different aſpects to different inquirers. Something of this kind is experienced even in thoſe more exact Sciences, where the whole buſineſs of an elementary writer is to ſtate known and demonſtrated truths, in a logical and pleaſing ſeries. It has been experienced moſt remarkably in pure geometry, the elements of which have been modelled into a hundred different forms by the firſt mathematicians of modern Europe; while none of them has yet been able to unite the ſuffrages of the public in favour of any one arrangement as indiſputably the beſt. What allowances, then, are thoſe entitled to, who, venturing upon a vaſt and untrodden field, aſpire to combine with the taſk of original ſpeculation, a ſyſtematical regard to luminous method, if they ſhould ſometimes happen to miſtake the hiſtorical order of their own concluſions for the natural procedure of the human underſtanding!

NOTE (F), p. 502

When this memoir was firſt written, I was not fully aware to what an extent the French Economiſts had been

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anticipated in ſome of their moſt important conclusions, by writers (chiefly Britiſh) of a much earlier date. I had often, indeed, been ſtruck with the coincidence between their reaſonings concerning the advantages of their territorial tax, and Mr. Locke's ſpeculations on the ſame ſubject, in one of his political diſcourſes publiſhed ſixty years before; as well as with the coincidence of their argument againſt corporations and excluſive companies, with what had been urged at a ſtill earlier period, by the celebrated John de Witt; by Sir Joſiah Child; by John Cary of Briſtol; and by various other ſpeculative men, who appeared in the latter part of the ſeventeenth century. To theſe laſt writers, my attention had been directed by ſome quotations and references of the Abbé Morellet, in his very able Memoir on the Eaſt India Company of France, printed in 1769. Many paſſages, however, much more full and explicit than thoſe which had fallen in his way, have been pointed out to me by the Earl of Lauderdale, in his curious and valuable collection of rare Engliſh Tracts relating to political economy. In ſome of theſe, the argument is ſtated in a manner ſo clear and ſo concluſive, as to render it ſurpriſing, that truths of which the public has been ſo long in poſſeſſion, ſhould have been ſo completely overborne by prejudice and miſrepreſentation, as to have had, to a large proportion of readers, the appearance of novelty and paradox, when revived in the philoſophical theories of the preſent age*.

The

* That the writers of this Iſland ſhould have had the ſtart of thoſe in the greater part of Europe, in adopting enlightened ideas concerning commerce, will not appear ſurpriſing, when we conſider that " according to the Common Law of England, the freedom " of trade is the birthright of the ſubject." For the opinions of Lord Coke and of Lord Chief-Juſtice Forteſcue, on this point, ſee a pamphlet by Lord Lauderdale, entitled, " Hints to the Ma- " nufacturers

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The ſyſtem of political economy which profeſſes to regulate the commercial intercourſe of different nations, and which Mr. Smith has diſtinguiſhed by the title of the Commercial, or Mercantile Syſtem, had its root in prejudices ſtill more inveterate than thoſe which reſtrained the freedom of commerce and induſtry among the members of the ſame community. It was ſupported not only by the prejudices with which all innovations have to contend, and by the talents of very powerful bodies of men intereſted to defend it, but by the miſtaken and clamorous patriotiſm of many good citizens, and their blind hoſtility to ſuppoſed enemies or rivals abroad. The abſurd and deluſive principles, too, formerly ſo prevalent, with reſpect to the nature of national wealth, and the eſſential importance of a favourable balance of trade (principles which, though now ſo clearly and demonſtrably exploded by the arguments of Mr. Smith, muſt be acknowledged to fall in naturally, and almoſt inevitably, with the firſt apprehenſions of the mind when it begins to ſpeculate concerning the Theory of Commerce), communicated to the Mercantile Syſtem a degree of plauſibility, againſt which the moſt acute reaſoners of our own times are not always ſufficiently on their guard. It was accordingly, at a conſiderably later period, that the wiſdom of its maxims came to be the ſubject of general diſcuſſion; and, even at this day, the controverſy to which the diſcuſſion gave riſe cannot be ſaid to be completely ſettled, to the ſatiſfaction of all parties. A few enlightened individuals, however, in different parts of Europe, very early got a

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« nufacturers of Great Britain," &c. (printed in 1805); where alſo may be found a liſt of ſtatutes containing recognitions and declarations of the above principle.

NOTES. glimpse of the truth*; and it is but justice, that the scattered hints which they threw out should be treasured up as materials for literary history. I have sometimes thought of attempting a slight sketch on that subject myself; but am not without hopes that this suggestion may have the effect of recommending the task to some abler hand. At present, I shall only quote one or two paragraphs from a pamphlet published in 1734, by Jacob Vanderlint †; an author whose name has been frequently referred to of late years, but whose book never seems to have attracted much notice till long after the publication of the Wealth of Nations. He describes himself, in his Preface, as an *ordinary tradesman, from whom the conciseness and accuracy of a scholar* is not to be expected; and yet the following passages will bear a comparison, both in point of good sense and of liberality, with what was so ably urged by Mr. Hume twenty years afterwards, in his Essay on the Jealousy of Trade.

"All nations have some commodities peculiar to "them, which, therefore, are undoubtedly designed to

* According to the statement of Lord Herbert of Cherbury, the following doctrine was delivered in the English House of Commons by Sir Thomas More (then Speaker), almost three centuries ago. "I say confidently, you need not fear this penury or scarce-"ness of money; the intercourse of things being so establish'd "throughout the whole world, that there is a perpetual derivation "of all that can be necessary to mankind. Thus, your commo-"dities will ever find out money; while, not to go far, I shall "produce our own merchants only, who, (let me assure you) will "be always as glad of your corn and cattle as you can be of any "thing they bring you."—The Life and Reign of King Henry the Eighth, London, 1672, p. 135.

It is not a little discouraging to reflect, that the mercantile prejudice here combated by this great man, has not yet yielded entirely to all the philosophical lights of the 18th century.

† "Money Answers all Things," &c. &c. London, 1734.

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" be the foundation of commerce between the ſeveral " nations, and produce a great deal of maritime em- " ployment for mankind, which probably, without ſuch " peculiarities, could not be; and in this reſpect, I " ſuppoſe, we are diſtinguiſhed, as well as other na- " tions; and I have before taken notice, that if one " nation be by nature more diſtinguiſhed in this reſpect " than another, as they will, by that means, gain more " money than ſuch other nations, ſo the prices of all " their commodities and labour will be higher in ſuch " proportion, and conſequently, they will not be richer " or more powerful for having more money than their " neighbours.

" But, if we import any kind of goods cheaper than " we can now raiſe them, which otherwiſe might be " as well raiſed at home; in this caſe, undoubtedly, " we ought to attempt to raiſe ſuch commodities, and " thereby furniſh ſo many new branches of employ- " ment and trade for our own people; and remove the " inconvenience of receiving any goods from abroad, " which we can anywiſe raiſe on as good terms our- " ſelves: and, as this ſhould be done to prevent every " nation from finding their account with us by any " ſuch commodities whatſoever, ſo this would more " effectually ſhut out all ſuch foreign goods than any " law can do.

" And as this is all the prohibitions and reſtraints " whereby any foreign trade ſhould be obſtructed, ſo, " if this method were obſerved, our gentry would find " themſelves the richer, notwithſtanding their con- " ſumption of ſuch other foreign goods, as being the " peculiarities of other nations, we may be obliged " to import. For if, when we have thus raiſed all we " can at home, the goods we import after this is done " be cheaper than we can raiſe ſuch goods ourſelves,

" (which

NOTES. " (which they muſt be, otherwiſe we ſhall not import " them,) it is plain, the conſumption of any ſuch goods " cannot occaſion ſo great an expence as they would, " if we could ſhut them out by an act of parliament, " in order to raiſe them ourſelves.

" From hence, therefore, it muſt appear, that it is " impoſſible any body ſhould be poorer, for uſing any " foreign goods at cheaper rates than we can raiſe them " ourſelves, after we have done all we poſſibly can to " raiſe ſuch goods as cheap as we import them, and find " we cannot do it; nay, this very circumſtance makes all " ſuch goods come under the character of the *peculia-* " *rities* of thoſe countries, which are able to raiſe any " ſuch goods cheaper than we can do; for they will " neceſſarily operate as ſuch."—(pp. 97, 98, 99.)

The ſame author, in another part of his work, quotes from Eraſmus Philips, a maxim which he calls *a glorious one:* " That a trading nation ſhould be an open ware- " houſe, where the merchant may buy what he pleaſes, " and ſell what he can. Whatever is brought to you, " if you don't want it, you won't purchaſe it; if you " do want it, the largeneſs of the impoſt don't keep it " from you."

" All nations of the world, therefore," (ſays Vanderlint) " ſhould be regarded as one body of trades- " men, exerciſing their various occupations for the " mutual benefit and advantage of each other.—(p. 42.) " I will not contend," (he adds, evidently in compli- " ance with national prejudices,) " I will not contend " for a free and unreſtrained trade with reſpect to " France, though I can't ſee it could do us any harm " even in that caſe."—(p. 45.)

In theſe laſt ſentences, an argument is ſuggeſted for a free commerce all over the globe, founded on the ſame principle on which Mr. Smith has demonſtrated the

the beneficial effects of a division and distribution of labour among the members of the same community. The happiness of the whole race would, in fact, be promoted by the former arrangement, in a manner exactly analogous to that in which the comforts of a particular nation are multiplied by the latter. NOTES.

In the same Essay, Mr. Vanderlint, following the footsteps of Locke, maintains, with considerable ingenuity, the noted doctrine of the Economists, that all taxes fall ultimately on land; and recommends the substitution of a land-tax, in place of those complicated fiscal regulations, which have been everywhere adopted by the statesmen of modern Europe; and which, while they impoverish and oppress the people, do not, in the same degree, enrich the sovereign *.

The doctrine which more exclusively distinguishes this celebrated sect, is neither that of the freedom of trade, nor of the territorial tax, (on both of which topics they had been, in part, anticipated by English

* Lord Lauderdale has traced some hints of what are commonly considered as the peculiarities of the economical system, in various British publications now almost forgotten. The following extract, from a Treatise published by Mr. Asgill, in 1696, breathes the very spirit of Quesnay's philosophy.

"What we call commodities is nothing but land severed from "the soil. Man deals in nothing but earth. The merchants are "the factors of the world, to exchange one part of the earth for "another. The king himself is fed by the labour of the ox: "and the clothing of the army, and victualling of the navy, "must all be paid for to the owner of the soil as the ultimate "receiver. All things in the world are originally the produce of "the ground, and there must all things be raised."—(Inquiry into the Nature and Origin of Public Wealth, p. 113.)

The title of Asgill's Treatise is, "Several Assertions proved, in order to create another Species of Money than Gold." Its object was to support Dr. Chamberlayne's proposition for a Land Bank, which he laid before the English House of Commons in 1693, and before the Scotish Parliament in 1703.

writers),

NOTES. writers,) but what they have ſo ingeniouſly and forcibly urged, with reſpect to the tendency of the exiſting regulations and reſtraints, to encourage the induſtry of towns in preference to that of the country. To revive the languiſhing agriculture of France was the firſt and the leading aim of their ſpeculations; and it is impoſſible not to admire the metaphyſical acuteneſs and ſubtlety, with which all their various diſcuſſions are ſo combined as to bear ſyſtematically upon this favourite object. The influence of their labours in turning the attention of French ſtateſmen, under the old monarchy, to the encouragement of this eſſential branch of national induſtry, was remarked by Mr. Smith more than thirty years ago; nor has it altogether ceaſed to operate in the ſame direction, under all the violent and fantaſtic metamorphoſes which the government of that country has ſince exhibited *.

In combating the policy of commercial privileges, and in aſſerting the reciprocal advantages of a free trade among different nations, the founders of the economical ſect candidly acknowledged, from the beginning, that their firſt lights were borrowed from England. The teſtimony of M. Turgot upon this point is ſo perfectly deciſive, that I hope to gratify ſome of my readers (in the preſent interrupted ſtate of our communication with the continent), by the following quotations from a memoir, which, till lately, was very little known, even in France. They are tranſcribed from his Eloge on M. Vincent de Gournay; a name which has always been united with that of Queſnay, by the French writers who have attempted to trace the ori-

* It is but juſtice to the Economiſts to add, that they have laid more ſtreſs than any other claſs of writers whatſoever, on the principles of political economy, conſidered in their connection with the intellectual and moral character of a people.

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gin and progrefs of the *now* prevailing opinions on this branch of legiflation. — (Oeuvres de M. Turgot, Tome III. Paris, 1808.) NOTES.

" JEAN-CLAUDE-MARIE VINCENT, Seigneur DE " GOURNAY, &c. eft mort à Paris le 27. Juin dernier " (1759) âgé de quarante fept ans.

" Il etoit né à Saint-Malo, au moi de Mai 1712, de " Claude VINCENT, l'un des plus confidérables négo- " cians de cette ville, et fecrétaire du roi.

" Ses parens le deftinèrent au commerce, et l'en- " voyèrent à Cadix en 1729, à peine âgé de dix fept " ans."—(p. 321.)

" Aux lumières que M. de Gournay tiroit de fa " propre expérience et de fes réflexions, il joignit la " lecture des meilleurs ouvrages que poffèdent fur cette " matière les différentes nations de l'Europe, *et en par-* " *ticulier la nation Angloife, la plus riche de toutes en ce* " *genre, et dont il s'étoit rendu, pour cette raifon, la langue* " *familière.* Les ouvrages qu'il lut avec plus de plaifir, " et dont l g oûta le plus la doctrine, furent les traités " du fameux Jofias Child, qu'il a traduits depuis en " François, et les mémoires du Grand Penfionnaire " Jean de Witt. On fait que ces deux grands hommes " font confidérés, l'un en Angleterre, l'autre en Hol- " lande, comme les légiflateurs du commerce; que " leurs principes font devenus les principes nationaux, " et que l'obfervation de ces principes eft regardée " comme une des fources de la prodigieufe fupériorité " que ces deux nations ont acquife dans le commerce " fur toutes les autres puiffances. M. de Gournay " trouvoit fans ceffe dans la pratique d'un commerce " étendu la vérification de ces principes fimples et " lumineux, il fe les rendoit propres fans prévoir qu'il " étoit deftiné à en repandre un jour la lumière en

" France,

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" France, et à mériter de ſa patrie le même tribut de
" reconnoiſſance, que l'Angleterre et la Hollande ren-
" dent à la mémoire de ces deux bienfaiteurs de leur
" nation et de l'humanité."—(pp. 324, 325.)

" M. de Gournay, après avoir quitté l'Eſpagne, prit
" la reſolution d'employer quelques années à voyager
" dans les différentes parties de l'Europe, ſoit pour
" augmenter ſes connoiſſances, ſoit pour étendre ſes
" correſpondances et former des liaiſons avantageuſes
" pour le commerce, qu'il ſe propoſoit de continuer.
" Il voyagea à Hambourg ; il parcourut la Hollande et
" l'Angleterre ; partout il faiſoit des obſervations et
" raſſembloit des mémoires ſur l'etat du commerce et
" de la marine, et ſur les principes d'adminiſtration
" adoptés par ces différentes nations relativement à ces
" grands objets. Il entretenoit pendant ſes voyages
" une correſpondance ſuivie avec M. de Maurepas,
" auquel il faiſoit part des lumières qu'il recueilloit."
—(pp. 325, 326.)

" M. de Gournay acheta, en 1749, une charge de
" conſeiller au grand conſeil ; et une place d'intendant
" du commerce etant venue à vâquer au commence-
" ment de 1751, M. de Machault, à qui le mérite de
" M. de Gournay etoit très-connu, la lui fit donner.
" C'eſt de ce moment que la vie de M. de Gournay
" devint celle d'un homme public : ſon entrée au
" Bureau du commerce parut être l'epoque d'une
" révolution. M. de Gournay, dans une pratique de
" vingt ans du commerce le plus étendu et le plus
" varié, *dans la fréquentation des plus habiles négocians de*
" *Hollande et d'Angleterre, dans la lecture des auteurs les*
" *plus eſtimés de ces deux nations, dans l'obſervation at-*
" *tentive des cauſes de leur* [illegible] *mnante proſpérité*, s'étoit fait
" des principes qui [illegible] nouveaux à quelques-uns
" des

" des magiſtrats qui compoſoient le Bureau du Com-
" merce."—(pp. 327,328.)

" M. de Gournay n'ignoroit pas que pluſieurs des
" abus auxquels il s'oppoſoit, avoient été autrefois
" établis dans une grande partie de l'Europe, et qu'il
" en reſtoit même encore des veſtiges en Angleterre;
" mais il ſavoit auſſi que le gouvernement Anglois en
" avoit détruit une partie; que s'il en reſtoit encore
" quelques-unes, bien loin de les adopter comme des
" établiſſemens utiles, il cherchoit à les reſtreindre, à les
" empêcher de s'étendre, et ne les toléroit encore, que
" parceque la conſtitution républicaine met quelquefois
" des obſtacles à la réformation de certains abus,
" lorſque ces abus ne peuvent être corrigés que par une
" autorité dont l'exercice le plus avantageux au peu-
" ple excite toujours ſa défiance. *Il ſavoit enfin que*
" *depuis un ſiècle toutes les perſonnes éclairées, ſoit en*
" *Hollande, ſoit en Angleterre, regardoient ces abus comme*
" *des reſtes de la barbarie Gothique et de la foibleſſe de tous*
" *les gouvernemens qui n'avoient ni connu l'importance de*
" *la liberté publique, ni ſu la protéger des invaſions de*
" *l'eſprit monopoleur et de l'intérêt particulier**.

" M. de

* Some of theſe liberal principles found their way into France before the end of the 17th century.—See a very curious book entitled, *Le Détail de la France ſous le Regne Preſent.* The firſt edition (which I have never met with), appeared in 1698 or 1699; the ſecond was printed in 1707. Both editions are anonymous; but the author is well known to have been M. de Bois-Guilbert; to whom Voltaire has alſo (erroneouſly) aſcribed the *Projet d'une Dixme Royale*, publiſhed in the name of the Maréchal de Vauban. (See the Ephémérides du Citoyen for the year 1769, Tome IX. pp. 12, 13.

The fortunate expreſſion, *laiſſez nous faire*, which an old merchant (Le Gendre) is ſaid to have uſed in a converſation with Colbert; and the ſtill more ſignificant maxim of the Marquis d'Argenſon, *pas trop gouverner*, are indebted chiefly for that proverbial cele-

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" M. de Gournay avoit fait et vu faire, pendant " vingt ans, le plus grand commerce de l'univers sans " avoir eu occasion d'apprendre autrement que par les " livres l'existence de toutes ces loix auxquelles il " voyoit attacher tant d'importance, et il ne croyoit " point alors qu'on le prendroit pour un *novateur* et un " *homme à systêmes*, lorsqu' il ne feroit que développer " les principes que l'experience lui avoit enseignés, et " qu'il voyoit universellement reconnus par les négo- " cians les plus éclairés avec lesquels il vivoit.

" Ces principes, qu'on qualifioit de *systême nouveau*, " ne lui paroissoient que les maximes du plus simple " bon sens. Tout ce prétendu *systême* êtoit appuyé sur " cette maxime, qu'en general tout homme connoit " mieux son propre intérêt qu'un autre homme à qui " cet intérêt est enitèrement indifférent*.

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celebrity which they have now acquired, to the accidental lustre reflected upon them by the discussions of more modern times. They must, at the same time, be allowed to evince in their authors, a clear perception of the importance of a problem, which Mr. Burke has somewhere pronounced to be " *one of the finest in legis-* " *lation ;—to ascertain, what the state ought to take upon itself* " *to direct by the public wisdom ; and what it ought to leave, with* " *as little interference as possible, to individual discretion.*" The solution of this problem, in some of its most interesting cases, may be regarded as one of the principal objects of Mr. Smith's Inquiry ; and, among the many happy changes which that work has gradually produced in prevailing opinions, none is, perhaps, of greater consequence, than its powerful effect in discrediting that empirical spirit of tampering Regulation, which the multitude is so apt to mistake for the provident sagacity of political experience.

* I have endeavoured, in a former work, to vindicate, upon the very same principle, some of Mr. Smith's political speculations against the charge of being founded rather on theory than on actual experience. I was not aware, till very lately, that this view of the subject had been sanctioned by such high authorities as M. de Gournay and M. Turgot.—See Philosophy of the Human Mind, pp. 254, 255, 256, 3d. edit.

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"De là M. de Gournay concluoit, que lorſque "l'intérêt des particuliers eſt préciſément le même que "l'intérêt general, ce qu'on peut faire de mieux eſt de "laiſſer chaque homme libre de faire ce qu'il veut.— "Or il trouvoit impoſſible que dans le commerce "abandonné à lui-meme, l'intérêt particulier ne con- "courût pas avec l'intérêt général."—(pp. 334, 335, 336.)

In mentioning M. de Gournay's opinion on the ſubject of taxation, M. Turgot does not take any notice of the ſource from which he derived it. But on *this* head (whatever may be thought of the juſtneſs of that opinion) there can be no doubt among thoſe who are acquainted with the writings of Locke and of Vanderlint. "Il penſoit" (ſays Turgot) "que tous les "impôts, ſont en derniere analyſe, toujours payés par "le propriétaire, qui vend d'autant moins les produits "de ſa terre, et que ſi tous les impôts êtoient répartis "ſur les fonds, les propriétaires et le royaume y "gagneroient tout ce qu' abſorbent lex fraix de régie, "toute la conſommation ou l'emploi ſtérile des hommes "perdus, ſoit à percevoir les impôts, ſoit à faire la "contrebrande, ſoit à l'empecher, ſans compter la "prodigieuſe augmentation des richeſſes et des valeurs "réſultantes de l'augmentation du commerce."— "(p. 350, 351.)

In a note upon this paſſage by the Editor, this project of a territorial tax, together with that of a free trade, are mentioned among the moſt important points in which Gournay and Queſnay agreed perfectly together*: and it is not a little curious, that the ſame two doctrines ſhould have been combined together as parts

* Ceci eſt, avec la liberté du commerce et du travail, un des principaux points ſur leſquels M. de Gournay et M. Queſnay ont été complettement d'accord.

NOTES. of the ſame ſyſtem, in the Treatiſe of Vanderlint, publiſhed almoſt twenty years before *.

It does not appear from Turgot's account of M. de Gournay, that any of his original works were ever publiſhed; nor have I heard that he was known even in the capacity of a tranſlator, prior to 1752. "Il eut "le bonheur" (ſays M. Turgot) "de rencontrer dans "M. Trudaine, le même amour de la vérité et du bien "public qui l'animoit; comme il n'avoit encore dévo- "loppé ſes principes que par occaſion, dans la diſcuſſion "des affaires ou dans la converſation, M. Trudaine "l'engagea à donner comme une eſpèce de corps de ſa "doctrine; et c'eſt dans cette vue qu'il a traduit, en "1752, les traités ſur le commerce et ſur l'intérêt de "l'argent, de Joſias Child et de Thomas Culpepper." —(p. 354.) I quote this paſſage, becauſe it enables me to correct an inaccuracy in point of dates, which

* I have already quoted, from Vanderlint, his opinion about the freedom of trade. His ideas with reſpect to taxation I ſhall ſtate in his own words: "I can't diſmiſs this head without ſhew- "ing, that if all the taxes were taken off goods, and levied on "lands and houſes only, the gentlemen would have more money "left out of their eſtates, than they have now when the taxes are "almoſt wholly levied on goods." For his argument in proof of this propoſition, ſee his Eſſay on Money, p. 109, et ſeq. See alſo Locke's Conſiderations on the lowering of Intereſt and raiſing the Value of Money; publiſhed in 1691.

As to the *diſcovery* (as it has been called) of the *luminous diſtinction between the "produit total" and the "produit net de la "culture*,*" it is not worth while to diſpute about its number. Whatever merit this theory of taxation may poſſeſs, the whole credit of it evidently belongs to thoſe who firſt propoſed the doctrine ſtated in the foregoing paragraph. The calculations of M. Queſnay, however intereſting and uſeful they may have appeared in a country where ſo great a proportion of the territory was cultivated by *Métayers* or *Coloni Partiarii*, cannot ſurely be conſidered as throwing any new light on the general principles of Political Economy.

* See the Ephémérides du Citoyen for the year 1769, T. I. pp. 15, 25 and 26, and T. IX. p. 9.

has

has eſcaped the learned and ingenious writer to whom we are indebted for the firſt complete edition which has yet appeared of Turgot's works. After dividing the Economiſts into two ſchools, that of Gournay, and that of Queſnay, he claſſes under the former denomination (among ſome other very illuſtrious names), Mr. David Hume; whoſe Political Diſcourſes, I muſt take the liberty of remarking, were publiſhed as early as 1752, the very year when M. Gournay publiſhed his tranſlations of Child and of Culpepper.

The ſame writer afterwards adds: " Entre ces deux " écoles, profitant de l'une et de l'autre, mais évitant " avec ſoin de paroître tenir à aucune, ſe ſont élevés " quelques philoſophes éclectiques, à la tête deſquels " il faut placer M. Turgot, l'Abbé de Condillac, et le " célèbre Adam Smith; et parmi leſquels on doit " compter très-honorablement le traducteur de celui-ci, " M. le Sénateur Germain Garnier, en Angleterre " my Lord Landſdown, à Paris M. Say, à Genève " M. Simonde."

How far Mr. Smith has availed himſelf of the writings of the Economiſts in his Wealth of Nations, it is not my preſent buſineſs to examine. All that I wiſh to eſtabliſh is, his indiſputable claim to the ſame opinions which he profeſſed in common with them, ſeveral years before the names of either Gournay or of Queſnay were at all heard of in the republic of letters.

With reſpect to a very diſtinguiſhed and enlightened Engliſh ſtateſman, who is here included along with Mr. Smith among the *eclectic* diſciples of Gournay and of Queſnay, I am enabled to ſtate, from his own authority, the accidental circumſtance which firſt led him into this train of thought. In a letter which I had the honour to receive from his Lordſhip in 1795, he expreſſes himſelf thus:

 " I owe

"I owe to a journey I made with Mr. Smith from "Edinburgh to London, the difference between light "and darkneſs through the beſt part of my life. The "novelty of his principles, added to my youth and "prejudices, made me unable to comprehend them at "the time, but he urged them with ſo much benevo-"lence, as well as eloquence, that they took a certain "hold, which, though it did not develope itſelf ſo as "to arrive at full conviction for ſome few years after, "I can fairly ſay, has conſtituted, ever ſince, the hap-"pineſs of my life, as well as any little conſideration "I may have enjoyed in it."

As the current of public opinion, at a particular period (or at leaſt the prevailing habits of ſtudy), may be pretty accurately judged of by the books which were *then* chiefly in demand, it may be worth mentioning, before I conclude this note, that in the year 1751 (the ſame year in which Mr. Smith was promoted to his Profeſſorſhip), ſeveral of our choiceſt tracts on ſubjects connected with political economy were re-publiſhed by Robert and Andrew Foulis, printers to the Univerſity of Glaſgow. A book of Mr. Law's, entitled, Propoſals and Reaſons for conſtituting a Council of Trade in Scotland, &c. reprinted in that year, is now lying before me; from which it appears, that the following works had recently iſſued from the univerſity preſs: —Child's Diſcourſe of Trade; Law's Eſſay on Money and Trade; Gee's Trade and Navigation of Great Britain conſidered; and Berkeley's Queriſt. In the ſame liſt, Sir William Petty's Political Arithmetic is advertiſed as being then *in the preſs*.

Mr. Smith's Lectures, it muſt be remembered (to the fame of which he owed his appointment at Glaſgow), were read at Edinburgh as early as 1748.

NOTE (G), p.102.

Among the queſtionable doctrines to which Mr. Smith has lent the ſanction of his name, there is perhaps none that involves ſo many important conſequences as the opinion he has maintained concerning the expediency of legal reſtrictions on the rate of intereſt. The inconcluſiveneſs of his reaſoning on this point, has been evinced, with a ſingular degree of logical acuteneſs, by Mr. Bentham, in a ſhort treatiſe entitled *A Defence of Uſury*: a performance to which (notwithſtanding the long interval that has elapſed ſince the date of its publication) I do not know that any anſwer has yet been attempted; and which a late writer, eminently acquainted with the operations of commerce, has pronounced (and, in my opinion, with great truth) to be "perfectly unanſwerable*." It is a remarkable circumſtance, that Mr. Smith ſhould, in this ſolitary inſtance, have adopted, on ſuch ſlight grounds, a concluſion ſo ſtrikingly contraſted with the general ſpirit of his political diſcuſſions, and ſo manifeſtly at variance with the fundamental principles which, on other occaſions, he has ſo boldly followed out, through all their practical applications. This is the more ſurpriſing, as the French Economiſts had, a few years before, obviated the moſt plauſible objections which are apt to preſent themſelves againſt this extenſion of the doctrine of commercial freedom. See, in particular, ſome obſervations in M. Turgot's Reflections on the Formation and Diſtribution of Riches; and a ſeparate Eſſay, by

* Sir Francis Baring. Pamphlet on the Bank of England.

the

NOTES. the same author, entitled, "Mémoire sur le Prêt à [illegible] et sur le Commerce des Fers.*"

[illegible] this particular question, however, as well as [illegible] mentioned in the preceding Note, I must [illegible] to assert the prior claims of our own countrymen to those of the Economists. From a memoir presented by the celebrated Mr. Law (before his elevation to the ministry), to the Regent Duke of Orleans, that very ingenious writer appears to have held the same opinion with M. Turgot; and the arguments he employs in support of it are expressed with that clearness and conciseness which, in general, distinguish his compositions. The memoir to which I refer is to be found in a French work entitled, *Recherches et Considérations sur les Finances de France, depuis* 1595 *jusqu'en* 1721. See vol. vi. p. 181. Edit. printed at Liege, 1758.) In the same volume, this doctrine is ascribed by the editor, to Mr. Law as its author, or, at least, as its first broacher in France. "*Une opinion apportée en* "*France pour la première fois par M. Law*, c'est que "l'etat ne doit jamais donner de réglemens sur le taux "de l' interêt."—p. 64.

To this opinion Law appears evidently to have been led by Locke, whose reasonings (although he himself

* In an Essay read before a literary society in Glasgow, some years before the publication of the Wealth of Nations, Dr. Reid disputed the expediency of legal restrictions on the rate of interest; founding his opinion on some of the same considerations which were afterwards so forcibly stated by Mr. Bentham. His attention had probably been attracted to this question by a very weak defence of these restrictions in Sir James Stewart's Political Economy; a book which had then been recently published, and which (though he differed wi[illegible] any of its doctrines), he was accustomed, in his aca[illegible]ures, to recommend warmly to his students. It was [illegible]y systematic[illegible] on the subject that had appea[illegible]uage, prev[illegible] Mr. Smith's Inquiry.

declares in favour of a legal rate of intereſt) ſeem, all of them, to point at the oppoſite concluſion. Indeed the apology he ſuggeſts for the exiſting regulations is ſo trifling and ſo ſlightly urged, that one would almoſt ſuppoſe he was prevented merely by a reſpect for eſtabliſhed prejudices, from puſhing his argument to its full extent. The paſſage I allude to, conſidering the period when it was written, does no ſmall credit to Locke's ſagacity.—(See the folio edit. of his Works, vol. ii. p. 31. et ſeq.)

I would not have entered here into the hiſtorical details contained in the two laſt Notes, if I had not been anxious to obviate the effect of that weak, but inveterate prejudice which ſhuts the eyes of ſo many againſt the moſt manifeſt and important truths, when they are ſuppoſed to proceed from an obnoxious quarter. The leading opinions which the French Economiſts embodied and ſyſtematized were, in fact, all of Britiſh origin; and moſt of them follow as neceſſary conſequences, from a maxim of natural law, which (according to Lord Coke) is identified with the firſt principles of Engliſh juriſprudence. "*La loi de la liberté entière de* "*tout commerce eſt un corollaire du droit de propriété.*"

The truly exceptionable part of the economical ſyſtem (as I have elſewhere remarked) is that which relates to the power of the Sovereign. Its original authors and patrons were the decided oppoſers of political liberty, and, in their zeal for the right of property and the freedom of commerce, loſt ſight of the only means by which either the one or the other can be effectually protected.

NOTES.

NOTE (H), p.107.

In the early part of Mr. Smith's life it is well known to his friends, that he was for ſeveral years attached to a young lady of great beauty and acomplifhment. How far his addreſſes were favourably received, or what the circumſtances were which prevented their union, I have not been able to learn; but I believe it is pretty certain that, after this diſappointment, he laid aſide all thoughts of marriage. The lady to whom I allude died alſo unmarried. She ſurvived Mr. Smith for a conſiderable number of years, and was alive long after the publication of the firſt edition of this Memoir. I had the pleaſure of ſeeing her when ſhe was turned of eighty, and when ſhe ſtill retained evident traces of her former beauty. The powers of her underſtanding and the gaiety of her temper ſeemed to have ſuffered nothing from the hand of time.

END OF THE LIFE OF DR. SMITH.

APPENDIX.

THE two following articles have been repeatedly referred to of late in ſome reſpectable publications. As they are well known to have been written by Mr. Smith, and as the journal in which they firſt appeared has been long out of print *, the publiſhers of this complete edition of his works flatter themſelves, that they will gratify many readers, by giving a place here, in the form of an Appendix, to theſe intereſting relics of his early ſtudies.

A Dictionary of the Engliſh Language, by Samuel Johnſon, *A. M. Knapton, 2 vols. Folio, 4l. 15s.*

THE preſent undertaking is very extenſive. A dictionary of the Engliſh language, however uſeful, or rather neceſſary, has never been hitherto attempted with the leaſt degree of ſucceſs. To explain hard words and terms of art ſeems to have been the chief purpoſe of all the former compoſitions which have borne the title of Engliſh dictionaries. Mr. Johnſon has extended his views much farther, and has made a very full collection of all the different meanings of each Engliſh word, juſtified by examples from authors of good reputation. When we compare this book with other dictionaries, the merit of its author appears

* The Edinburgh Review. Printed for Hamilton and Balfour, 1755.

very extraordinary. Thoſe which in modern languages have gained the moſt eſteem, are that of the French academy, and that of the academy Della Cruſca. Both theſe were compoſed by a numerous ſociety of learned men, and took up a longer time in the compoſition, than the life of a ſingle perſon could well have afforded. The dictionary of the Engliſh language is the work of a ſingle perſon, and compoſed in a period of time very inconſiderable, when compared with the extent of the work. The collection of words appears to be very accurate, and muſt be allowed to be very ample. Moſt words, we believe, are to be found in the dictionary that ever were almoſt ſuſpected to be Engliſh; but we cannot help wiſhing, that the author had truſted leſs to the judgment of thoſe who may conſult him, and had oftener paſſed his own cenſure upon thoſe words which are not of approved uſe, tho' ſometimes to be met with in authors of no mean name. Where a work is admitted to be highly uſeful, and the execution of it intitled to praiſe; the adding, that it might have been more uſeful, can ſcarcely, we hope, be deemed a cenſure of it. The merit of Mr. Johnſon's dictionary is ſo great, that it cannot detract from it to take notice of ſome defects, the ſupplying which, would, in our judgment, add a conſiderable ſhare of merit to that which it already poſſeſſes. Thoſe defects conſiſt chiefly in the plan, which appears to us not to be ſufficiently grammatical. The different ſignifications of a word are indeed collected; but they are ſeldom digeſted into general claſſes, or ranged under the aning which the word principally expreſſes. And t care has not been taken to diſtinguiſh the words ly ſynonymous. The only method of explain- we intend, is by inſerting an article or two r. Johnſon, and by oppoſing to them the ſame articles,

articles, digeſted in the manner which we would have wiſhed him to have followed.

BUT *conjunct.* [bute, butan, Saxon.]

1. Except.

An emiſſion of immateriate virtues we are a little doubtful to propound, it is ſo prodigious: *but* that it is ſo conſtantly avouched by many. *Bacon.*

Who can it be, ye gods! *but* perjur'd Lycon?
Who can inſpire ſuch ſtorms of rage, *but* Lycon?
Where has my ſword left one ſo black, *but* Lycon?
Smith's Phædra and Hippolitus.

Your poem hath been printed, and we have no objection *but* the obſcurity of ſeveral paſſages, by our ignorance in facts and perſons. *Swift.*

2. Yet; nevertheleſs. It ſometimes only enforces *yet.*

Then let him ſpeak, and any that ſhall ſtand without, ſhall hear his voice plainly; *but* yet made extreme ſharp and exile, like the voice of puppets: and yet the articulate ſounds of the words will not be confounded. *Bacon's Nat. Hiſt.* N° 155.

Our wants are many, and grievous to be borne, *but* quite of another kind. *Swift.*

3. The particle which introduces the minor of a ſyllogiſm; now.

If there be a liberty and poſſibility for a man to kill himſelf to-day, then it is not abſolutely neceſſary that he ſhould live till to-morrow; *but* there is ſuch a liberty, therefore no ſuch neceſſity.
Bramhall againſt Hobbes.

God will one time or another make a difference between the good and the evil. *But* there is little or no difference made in this world: therefore there muſt be another world, wherein this difference ſhall be made. *Watts's Logic, Introduct.*

4. Only; nothing more than.

If my offence be of mortal kind,
That not my ſervice, paſt or preſent ſorrows,
Can ranſom me into his love again;
But to know ſo, muſt be my benefit. *Shakeſp. Othello.*

And *but* infirmity,
Which waits upon worn times, hath ſomething ſeiz'd
His wiſhed ability, he had himſelf
The lands and waters meaſur'd. *Shak. Winter's Tale.*

What nymph ſoe'er his voice *but* hears,
Will be my rival, tho' ſhe have *but* ears. *Ben. Johnſon.*

No, Aurengzebe, you merit all my heart,
And I'm too noble *but* to give a part. *Dryden.*

Did *but* men conſider the true notion of God, he would appear to be full of goodneſs. *Tillotſon.*

If we do *but* put virtue and vice in equal circumſtances, the advantages of eaſe and pleaſure will be found to be on the ſide of religion. *Tillotſon.*

The miſchiefs or harms that come by play, inadvertency, or ignorance, are not at all, or *but* very gently, to be taken notice of. *Locke on Education.*

If a reader examines Horace's art of Poetry, he will find *but* very few precepts in it, which he may not meet with in Ariſtotle. *Addiſon. Spectator.*

Prepar'd I ſtand: he was *but* born to try
The lot of man, to ſuffer and to die. *Pope's Odyſſey.*

5. Than.

The full moon was no ſooner up, and ſhining in all its brightneſs, *but* he privately opened the gate of paradiſe. *Guardian*, N° 167.

6. But that; without this conſequence that.

Froſts that conſtrain the ground,
Do ſeldom their uſurping power withdraw,
But raging floods purſue their haſty hand. *Dryden.*

7. Otherwiſe

7. Otherwiſe than that.

It cannot be *but* nature hath ſome director, of infinite power, to guide her in all her ways. *Hooker*, b. i. § 3.

Who ſhall believe,
But you miſuſe the reverence of your place? *Shakeſp.*

8. Not otherwiſe than.

A genius ſo elevated and unconfined as Mr. Cowley's, was *but* neceſſary to make Pindar ſpeak Engliſh. *Dryden.*

9. By any other means than.

Out of that will I cauſe thoſe of Cyprus to mutiny: whoſe qualification ſhall come into no true taſte again, *but* by tranſplanting of Caſſio. *Shakeſp. Othello.*

10. If it were not for this; if this were not.

Believe me, I had rather have loſt my purſe
Full of cruzades. And *but* my noble Moor
Is true of mind, and made of no ſuch baſeneſs,
As jealous creatures are, it were enough
To put him to ill-thinking. *Shakeſp. Othello.*

I here do give thee that with all my heart,
Which, *but* thou haſt already, with all my heart
I would keep from thee. *Shakeſp. Othello.*

11. However; howbeit.

I do not doubt but I have been to blame;
But, to purſue the end for which I came,
Unite your ſubjects firſt, then let us go,
And pour their common rage upon the foe. *Dryden.*

12. It is uſed after *no doubt*, *no queſtion*, and ſuch words, and ſignifies the ſame with *that*. It ſometimes is joined with *that*.

They made no account, *but that* the navy ſhould be abſolutely maſter of the ſeas. *Bacon's War with Spain.*

I fancied to myſelf a kind of eaſe in the change of the paroxyſm; never ſuſpecting *but that* the humour would have waſted itſelf. *Dryden.*

There is no queſtion *but* the King of Spain will reform moſt of the abuſes. *Addiſon on Italy.*

13. That. This ſeems no proper ſenſe in this place.

It is not therefore impoſſible, *but* I may alter the complexion of my play, to reſtore myſelf into the good graces of my fair criticks.

Dryden's Aurengzebe, Preface.

14. Otherwiſe than.

I ſhould ſin
To think *but* nobly of my grandmother.

Shakeſp. Tempeſt.

15. Even; not longer ago than.

Beroe *but* now I left; whom, pin'd with pain,
Her age and anguiſh from theſe rites detain.

Dryden.

It is evident, in the inſtance I gave *but* now, the conſciouſneſs went along. *Locke.*

16. A particle by which the meaning of the foregoing ſentence is bounded or reſtrained.

Thus fights Ulyſſes, thus his fame extends,
A formidable man, *but* to his friends. *Dryden.*

17. An objective particle; yet it may be objected.

But yet, madam ——
I do not like *but* yet; it does allay
The good precedence; fie upon *but* yet!
But yet is as a jaylour, to bring forth
Some monſtrous malefactor. *Shak. Antony and Cleop.*

Muſt the heart then have been formed and conſtituted, before the blood was in being? *But* here again, the ſubſtance of the heart itſelf is moſt certainly made and nouriſhed by the blood, which is conveyed to it by the coronary arteries. *Bentley.*

18. But for; without; had not this been.

Raſh man! forbear, *but* for ſome unbelief,
My joy had been as fatal as my grief. *Waller.*

Her

Her head was bare
But for her native ornament of hair,
Which in a ſimple knot was ty'd above.

Dryden's Fables.

When the fair boy receiv'd the gift of right,
And, *but* for miſchief, you had dy'd for ſpight.

Dryden.

BUT, an Engliſh particle which denotes oppoſition, and which, according to the different modifications of the general ſenſe of oppoſition, ſometimes holds the place of an adverb, ſometimes of a prepoſition, ſometimes of a conjunction, and ſometimes even of an interjection. It ſerves as a conjunction of four different ſpecies, as an adverſitive, as an alternative, as a conductive, and as a tranſitive conjunction. In its original and moſt proper meaning, however, it ſeems to be an adverſitive conjunction, in the ſenſe in which it is ſynonymous with *however*; and in which it is expreſſed in Latin by *ſed*, in French by *mais*. I ſhould have done this, *but* was prevented: I ſhould have done this; I was *however* prevented. The difference betwixt theſe two particles ſeems to conſiſt chiefly in this, That *but* muſt always ſtand at the beginning of the ſentence whoſe oppoſition it marks to what went before; whereas *however* is introduced more gracefully after the beginning of the oppoſed ſentence: and that the conſtruction may often be continued, when we make uſe of *but*; whereas, it muſt always be interrupted when we make uſe of *however*.

The uſe of *but*, upon this account, ſeems often to mark a more precipitate keenneſs in denoting the oppoſition, than the uſe of *however*. If, in talking of a quarrel, a perſon ſhould ſay, I ſhould have made ſome apology for my conduct, *but* was prevented by his inſolence; he would ſeem to expreſs more paſſion and keenneſs

keenneſs than if he had ſaid, I ſhould have made ſome apology for my conduct, I was *however* prevented by his inſolence.

2. *But* is likewiſe an alternative conjunction in the ſenſe in which it is nearly ſynonymous with the Engliſh *unleſs*, and *except*, with the Latin *niſi*, and with the French *ſinon*.

The people are not to be ſatisfied, *but* by remitting them ſome of their taxes.

Unleſs by remitting them, *&c.*

Except by remitting them, *&c.*

The firſt expreſſion ſeems to mark more peculiarly the inſufficiency of every other means to pacify the people, but that which is propoſed. The ſecond ſeems to mark more peculiarly, that either this means muſt be employed, or the public diſturbances will go on, and is therefore more alternative than the firſt. The third expreſſion ſeems to mark the ſenſe of one who out of all the means that can be propoſed, chuſes that which is moſt effectual. When we make uſe of *unleſs*, we do not mark that we have conſidered of any other means beſides that which is propoſed. Whereas, when we make uſe of *but* or *except*, we ſhow that we have conſidered of ſome other means. *But* marks a negative rejection of every other means, but thoſe propoſed. *Except* a poſitive choice of the means propoſed. *Unleſs* marks neither the one nor the other; and merely denotes an alternative, that either this muſt be done, or that will follow.

3. *But* is likewiſe a conductive conjunction in the ſenſe in which it is nearly ſynonymous with the Latin *quin*, with the French *que*, and with the Engliſh *than* or *that*, when the firſt is preceded and the other followed by the particles of negation *no* or *not*.

The full moon was no ſooner up, *than* he privately opened the gate of paradiſe.

But

But he privately opened, *&c.*

It cannot be doubted, that the King of Spain will not reform moſt of the abuſes.

But the King of Spain will reform, *&c.*

Who ſhall believe, *but* you miſuſe the reverence of your place.

That you do not miſuſe, *&c.*

It cannot be *but* nature hath ſome director, *&c.*

It cannot be *that* nature hath not ſome director.

4. *But* is likewiſe a tranſitive conjunction in the ſenſe in which it is ſynonymous with the Latin *ſed*, and with the French *or*.

All animals are mortal, *but* all men are animals, *&c.*

5. *But* is likewiſe an adverb of quantity, and ſignifies *no more than*, and is nearly ſynonymous with the Latin *tantum*, and with the Engliſh *only*.

I ſaw *no more than* three plants.

I ſaw *but* three plants.

I ſaw three plants *only*.

A genius ſo elevated and unconfined as Mr. Cowley's was *no more than* neceſſary to make Pindar ſpeak Engliſh.

Was *but* neceſſary, *&c.*

Was *only* neceſſary, *&c.*

This laſt expreſſion might here, perhaps, be thought improper, becauſe it might give occaſion to an ambiguity; and might either ſignify, that nothing leſs than ſuch a genius was capable of making Pindar ſpeak Engliſh, or that nothing more was requiſite for this purpoſe. Saving this ambiguity, the expreſſion is, in every other reſpect, perfectly proper.

I ſhould ſin to think *but* nobly of my grandmother.

No more than nobly, *&c.*

Only nobly, *&c.*

Ulyſſes

Ulyſſes was formidable, *but* to his friends.
To his friends *only*.
Did *but* men conſider the true notion of God.
Did men *only* conſider, *&c.*
Beroe *but* now I left.
Beroe I left now *only*.

6. *But* is alſo a prepoſition, in which uſe it is ſynonymous with *except*, and would be expreſſed in Latin by *præter*, in French by *hors*.
They are all dead *but* three.
They are all dead *except* three.
Who can it be ye gods *but* perjur'd Lycon?
Except perjur'd Lycon, *&c.*

7. *But* is alſo uſed as an interjection, tho' not frequently; as in this phraſe,
Good God, *but* ſhe is handſom!

HUMOUR. *n. ſ.* [*humeur*, French; *humor*, Latin.]

1. Moiſture.
The aqueous *humour* of the eye will not freeze; which is very admirable, ſeeing it hath the perſpicuity and fluidity of common water.
Ray on the Creation.

2. The different kind of moiſture in man's body, reckoned by the old phyſicians to be phlegm, blood, choler, and melancholy, which, as they predominated, were ſuppoſed to determine the temper of mind.
Believe not theſe ſuggeſtions, which proceed
From anguiſh of the mind and *humours* black,
That mingle with thy fancy. *Milton's Agoniſtes.*

3. General turn or temper of mind.
As there is no *humour*, to which impudent poverty cannot make itſelf ſerviceable; ſo were there enow of thoſe of deſperate ambition, who would build their houſes upon others ruin. *Sidney, b.* ii.

There

There came with her a young lord, led hither with the *humour* of youth, which ever thinks that good whose goodness he sees not. *Sidney.*

King James, as he was a prince of great judgment, so he was a prince of a marvellous pleasant *humour*: as he was going through Lusen by Greenwich, he asked what town it was; they said Lusen. He asked a good while after, what town is this we are now in? They said still it was Lusen: said the King, I will be King of Lusen. *Bacon's Apophthegms.*

Examine how your *humour* is inclin'd,
And which the ruling passion of your mind. *Roscom.*

They, who were acquainted with him, know his *humour* to be such, that he would never constrain himself. *Dryden.*

In cases where it is necessary to make examples, it is the *humour* of the multitude to forget the crime, and to remember the punishment. *Addison's Freeholder.*

Good *humour* only teaches charms to last,
Still makes new conquests, and maintains the past. *Pope.*

4. Present disposition.

It is the curse of kings to be attended
By slaves, that take their *humour* for a warrant
To break into the blood-house of life. *Shak. K. John.*

Another thought her nobler *humour* fed. *Fairfax, b.* ii.

Their *humours* are not to be won,
But when they are impos'd upon. *Hudibras, p.* iii.

Tempt not his heavy hand;
But one submissive word which you let fall,
Will make him in good *humour* with us all. *Dryden.*

5. Grotesque imagery; jocularity; merriment.

6. Diseased or morbid disposition.

He was a man frank and generous; when well, denied himself nothing that he had a mind to eat or drink,

drink, which gave him a body full of *humours*, and made his fits of the gout frequent and violent. *Temple.*

7. Petulence; peevishness.

Is my friend all perfection, all virtue and discretion? Has he not *humours* to be endured, as well as kindness to be enjoyed? *South's Sermons.*

8. A trick; a practice.

I like not the *humour* of lying: he hath wronged me in some *humours:* I should have borne the humour'd letter to her. *Shak. Merry Wives of Windsor.*

9. Caprice; whim; predominant inclination.

In private, men are more bold in their own *humours;* and in consort, men are more obnoxious to other *humours;* therefore it is good to take both. *Bacon's Essays.*

HUMOUR, from the Latin *humor*, in its original signification, stands for moisture in general; from whence it has been restrained to signify the moisture of animal bodies, or those fluids which circulate thro' them.

It is distinguished from moisture in general in this, that *humours* properly express the fluids of the body, when, in a vitiated state, it would not be improper to say, that the fluids of such a person's body were full of *humours.*

The only fluids of the body, which, in their natural and healthful state, are called *humours*, are those in the eye; we talk of the aqueous *humour*, the chrystaline *humour*, without meaning any thing that is morbid or diseased: yet, when we say in general, that such a person has got a *humour* in his eye, we understand it in the usual sense of a vitiated fluid.

As the temper of the mind is supposed to depend upon the state of the fluids in the body, *humour* has come to be synonomous with temper and disposition.

A person's

A perſon's humour however is different from his diſpoſition in this, that humour ſeems to be the diſeaſe of a diſpoſition; it would be proper to ſay that perſons of a ſerious temper or diſpoſition of mind, were ſubject to melancholy humours; that thoſe of a delicate and tender diſpoſition, were ſubject to peeviſh humours.

Humour may be agreeable, or diſagreeable; but it is ſtill humour, ſomething that is whimſical, capricious, and not to be depended upon; an ill-natured man may have fits of good humour, which ſeem to come upon him accidentally, without any regard to the common moral caſes of happineſs or miſery.

A fit of chearfulneſs conſtitutes the whole of good humour; and a man who has many ſuch fits, is a good-humour'd man: yet he may not be good-natur'd; which is a character that ſuppoſes ſomething more conſtant, equable, and uniform, than what was requiſite to conſtitute good humour.

Humour is often made uſe of to expreſs the quality of the imagination which bears a conſiderable reſemblance to wit.

Wit expreſſes ſomething that is more deſigned, concerted, regular, and artificial; humour, ſomething that is more wild, looſe, extravagant, and fantaſtical; ſomething which comes upon a man by fits, which he can neither command nor reſtrain, and which is not perfectly conſiſtent with true politeneſs. Humour, it has been ſaid, is often more diverting than wit; yet a man of wit is as much above a man of humour, as a gentleman is above a buffoon; a buffoon however will often divert more than a gentleman.

Theſe inſtances may ſerve to explain the plan of a Dictionary which ſuggeſted itſelf to us. It can import no reflection upon Mr. Johnſon's Dictionary that the

ſubject has been viewed in a different light by others; and it is at leaſt a matter of curioſity to conſider the different views in which it appears. Any man who was about to compoſe a dictionary or rather a grammar of the Engliſh language, muſt acknowledge himſelf indebted to Mr. Johnſon for abridging at leaſt one half of his labour. All thoſe who are under any difficulty with reſpect to a particular word or phraſe, are in the ſame ſituation. The dictionary preſents them a full collection of examples; from whence indeed they are left to determine, but by which the determination is rendered eaſy. In this country, the uſefulneſs of it will be ſoon felt, as there is no ſtandard of correct language in converſation; if our recommendation could in any degree incite to the peruſal of it, we would earneſtly recommend it to all thoſe who are deſirous to improve and correct their language, frequently to conſult the dictionary. Its merit muſt be determined by the frequent reſort that is had to it. This is the moſt unerring teſt of its value: criticiſms may be falſe, private judgments ill-founded; but if a work of this nature be much in uſe, it has received the ſanction of the public approbation.

A LETTER

A LETTER to the Authors of the *Edinburgh Review*.

GENTLEMEN,

IT gives me pleasure to see a work so generally useful, as that which you have undertaken, likely to be so well executed in this country. I am afraid, however, you will find it impossible to support it with any degree of spirit, while you confine yourselves almost entirely to an account of the books published in Scotland. This country, which is but just beginning to attempt figuring in the learned world, produces as yet so few works of reputation, that it is scarce possible a paper which criticises upon them chiefly, should interest the public for any considerable time. The singular absurdity of some performances which you have so well represented in your first number, might divert your readers for once: But no eloquence could support a paper which consisted chiefly of accounts of such performances.

It is upon this account, that I take upon me, in the name of several of your readers, to propose to you, that you should enlarge your plan; that you should still continue to take notice, with the same humanity and candour, of every Scotch production that is tolerably decent. But that you should observe with regard to Europe in general the same plan which you followed with regard to England, examining such performances only, as, tho' they may not go down to the remotest posterity, have yet a chance of being remembered for thirty or forty years to come, and seem in the mean time to add something to that stock of literary amusement with which the world is at present provided. You will thus be able to give all proper encouragement

to ſuch efforts as this country is likely to make towards acquiring a reputation in the learned world, which I imagine it was the well-natured deſign of your work to ſupport; and you will oblige the public much more, by giving them an account of ſuch books as are worthy of their regard, than by filling your paper with all the inſignificant literary news of the times, of which not an article in a hundred is likely to be thought of a fortnight after the publication of the work that gave occaſion to it.

Nor will this taſk be ſo very laborious as at firſt one might be apt to imagine. For tho' learning is cultivated in ſome degree in almoſt every part of Europe, it is in France and England only that it is cultivated with ſuch ſucceſs or reputation as to excite the attention of foreign nations. In Italy, the country in which it was firſt revived, it has been almoſt totally extinguiſhed. In Spain, the country in which, after Italy, the firſt dawnings of modern genius appeared, it has been extinguiſhed altogether. Even the art of printing ſeems to have been almoſt neglected in thoſe two countries, from the little demand, I ſuppoſe, which there was for books: and tho' it has of late been revived in Italy, yet the expenſive editions which have been publiſhed there of the Italians claſſics are plainly calculated for the libraries of Princes and monaſteries, not to anſwer the demand of private perſons. The Germans have never cultivated their own language; and while the learned accuſtom themſelves to think and write in a language different from their own, it is ſcarce poſſible that they ſhould either think or write, upon any delicate or nice ſubject, with happineſs and preciſion. In medicine, chemiſtry, aſtronomy, and mathematics, ſciences which require only plain judgment joined to labour and aſſiduity, without demanding a great deal of what is called either

taſte

taſte or genius; the Germans have been, and ſtill continue to be ſucceſsful. The works of the Academies, indeed, both in Germany and Italy, and even in Ruſſia, are the objects of ſome curioſity every where; but it is ſeldom that the works of any particular man are inquired for out of his own country. On the contrary, the works of many particular men both in France and England are more inquired for among foreign nations than thoſe of any of their academies.

If we may paſs any general judgment concerning the literary merit of thoſe two great rivals in learning, trade, government and war: Imagination, genius and invention, ſeem to be the talents of the Engliſh; taſte, judgment, propriety and order, of the French. In the old Engliſh poets, in Shakeſpear, Spenſer and Milton, there often appears, amidſt ſome irregularities and extravagancies, a ſtrength of imagination ſo vaſt, ſo gigantic and ſuper-natural, as aſtoniſhes and confounds their reader into that admiration of their genius, which makes him deſpiſe, as mean and inſignificant, all criticiſm upon the inequalities in their writings. In the eminent French writers, ſuch ſallies of genius are more rarely to be met with; but inſtead of them, a juſt arrangement, an exact propriety and decorum, joined to an equal and ſtudied elegance of ſentiment and diction, which, as it never ſtrikes the heart like thoſe violent and momentary flaſhes of imagination, ſo it never revolts the judgment by any thing that is abſurd or unnatural, nor ever wearies the attention by any groſs inequality in the ſtyle, or want of connection in the method, but entertains the mind with a regular ſucceſſion of agreeable, intereſting and connected objects.

In natural philoſophy, the ſcience which in modern times has been moſt happily cultivated, almoſt all the great diſcoveries, which have not come from Italy or

Germany, have been made in England. France has ſcarce produced any thing very conſiderable in that way. When that ſcience was firſt revived in Europe, a fanciful, an ingenious and elegant, tho' fallacious, ſyſtem was generally embraced in that country: nor can we with reaſon wonder that it was ſo. It may well be ſaid of the Carteſian philoſophy, now when it is almoſt univerſally exploded, that, in the ſimplicity, preciſion and perſpicuity of its principles and conclusions, it had the ſame ſuperiority over the Peripatetic ſyſtem, which the Newtonian philoſophy has over it. A philoſophy, which, upon its firſt appearance, had ſo many advantages over its rival ſyſtem, was regarded by the French with peculiar fondneſs and admiration, when they conſidered it as the production of their own countryman, whoſe renown added new glory to their nation; and their attachment to it ſeems among them to have retarded and incumbered the real advancement of the ſcience of nature. They ſeem now however to be pretty generally diſengaged from the enchantment of that illuſive philoſophy; and it is wirh pleaſure that I obſerve in the new French Enclyclopedia, the ideas of Bacon, Boyle, and Newton, explained with that order, perſpicuity and good judgment, which diſtinguiſh all the eminent writers of that nation. As, ſince the union, we are apt to regard ourſelves in ſome meaſure as the countrymen of thoſe great men, it flattered my vanity, as a Briton, to obſerve the ſuperiority of the Engliſh philoſophy thus acknowledged by their rival nation. The two principal authors of that vaſt collection of every ſort of literature, Mr. Diderot and Mr. Alembert, expreſs every where the greateſt paſſion for the ſcience and learning of England, and inſert into their work not only the diſcoveries and obſervations of thoſe renowned philoſophers I juſt now mentioned, but of many inferior

ſerior Engliſh writers, whoſe names are now almoſt unknown, and whoſe works have been long diſregarded in their own country. It mortified me, at the ſame time to conſider that poſterity and foreign nations are more likely to be made acquainted with the Engliſh philoſophy by the writings of others, than by thoſe of the Engliſh themſelves. It ſeems to be the peculiar talent of the French nation, to arrange every ſubject in that natural and ſimple order, which carries the attention, without any effort, along with it. The Engliſh ſeem to have employed themſelves entirely in inventing, and to have diſdained the more inglorious but not leſs uſeful labour of arranging and methodizing their diſcoveries, and of expreſſing them in the moſt ſimple and natural manner. There is not only no tolerable ſyſtem of natural philoſophy in the Engliſh language, but there is not even any tolerable ſyſtem of any part of it: The Latin treatiſes of Keil and Gregory, two Scotſmen, upon the principles of mechanics and aſtronomy, may be regarded as the beſt things that have been written in this way by any native of Great Britain, tho' in many reſpects confuſed, inaccurate and ſuperficial. In Dr. Smith's Optics, all the great diſcoveries which had before been made in that ſcience are very compleatly recorded, along with many conſiderable corrections and improvements by that Gentleman himſelf. But if, in the knowledge of his ſcience, he appears much ſuperior to the two Scotſmen above mentioned, he is inferior even to them, who are far from being perfect, in the order and diſpoſition of his work. It will not I hope be imputed to any mean motive, that I take notice of this fault, which in theſe ſubjects is not of the higheſt importance, and which that Gentleman himſelf would, I dare ſay, be willing to acknowledge; for whoſe knowledge and capacity I have the higheſt eſteem,

whofe book has every other quality to recommend it, and who is himfelf, along with Dr. Bradley, almoft the only perfon now remaining in England to put us in mind of their illuftrious predeceffors. The learned world has been highly inftructed by the labours and ingenuity of both thefe Gentlemen, and I will venture to fay would have been much more fo, if in their own country they had had more rivals and more judges. But the Englifh of the prefent age, defpairing perhaps to furpafs the inventions, or to equal the renown of their forefathers, have difdained to hold the fecond place in a fcience in which they could not arrive at the firft, and feem to have abandoned the ftudy of it altogether.

The French work which I juft now mentioned, promifes to be the moft compleat of the kind which has ever been publifhed or attempted in any language. It will confift of many volumes in folio, illuftrated with above fix hundred plates, which make two volumes a part. There are above twenty Gentlemen engaged in it, all of them very eminent in their feveral profeffions, and many of them already known to foreign nations by the valuable works which they have publifhed, particularly Mr. Alembert, Mr. Diderot, Mr. Daubenton, Mr. Rouffeau of Geneva, Mr. Formey Secretary to the academy at Berlin, and many others. In the preliminary difcourfe, Mr. Alembert gives an account of the connection of the different arts and fciences, their genealogy and filiation as he calls it; which, a few alterations and corrections excepted, is nearly the fame with that of my Lord Bacon. In the body of the work, it is conftantly marked, to what art or fcience, and to what branch of that art or fcience each particular article belongs. In the articles themfelves, the reader will not find, as in other works of

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the ſame kind, a dry abſtract of what is commonly known by the moſt ſuperficial ſtudent of any ſcience, but a compleat, reaſoned and even critical examination of each ſubject. Scarce any thing ſeems to be omitted. Not only mathematics, natural philoſophy and natural hiſtory, which commonly fill up the greater part of works of this kind, are compleatly treated of; but all the mechanical arts are fully deſcribed, with the ſeveral machines which they make uſe of. Theology, morals, metaphyſics, the art of criticiſm, the hiſtory of the *belles lettres*, philoſophy, the literary hiſtory of ſects, opinions and ſyſtems of all kinds, the chief doctrines of ancient and modern juriſprudence, nay all the niceſt ſubtleties of grammar, are explained in a detail that is altogether ſurpriſing. There are few men ſo learned in the ſcience which they have peculiarly cultivated, as not to find in this work ſomething even with regard to it which will both inſtruct and entertain them; and with regard to every other, they will ſeldom fail of finding all the ſatisfaction which they could deſire. It promiſes indeed to be in every reſpect worthy of that magnificent eulogy which Mr. Voltaire beſtows upon it, when, in the concluſion of his account of the artiſts who lived in the time of Louis the Fourteenth, he tells us, " That the laſt age has put the " preſent in which we live in a condition to aſſemble " into one body, and to tranſmit to poſterity, to be " by them delivered down to remoter ages, the ſacred " repoſitory of all the arts and all the ſciences, all " of them puſhed as far as human induſtry can go. " This, continues he, is what a ſociety of learned " men, fraught with genius and knowledge, are " now labouring upon: an immenſe and immortal " work, which ſeems to accuſe the ſhortneſs of " human life."

This work, which has several times been disagreeably interrupted by some jealousy either of the civil or of the ecclesiastical government of France, to neither of which however the authors seem to have given any just occasion of suspicion, is not yet finished. The volumes of it which are yet to be published, will deserve, as they successively appear, to be particularly taken notice of in your future periodical reviews. You will observe, that tho' none of the authors of this collection appear to be mean or contemptible, yet they are not all equal. That the style of some of them is more declamatory, than is proper for a Dictionary; in which not only declamation, but any loose composition, is, more than any where, out of its place. That they seem too to have inserted some articles which might have been left out, and of which the insertion can serve only to throw a ridicule upon a work calculated for the propagation of every part of useful knowledge. The article of *Amour*, for example, will tend little to the edification either of the learned or unlearned reader, and might, one should think, have been omitted even in an Encyclopedia of all arts, sciences and trades. These censures however fall but upon a few articles, and those of no great importance. The remaining parts of the work may give occasion to many other observations of more consequence, upon the candour or partiality with which they represent the different systems of philosophy or theology, ancient or modern; the justness of their criticisms upon the celebrated authors of their own and of foreign nations; how far they have observed or neglected the just proportion betwixt the length of each article and the importance of the matter contained in it, and its fitness to be explained in a work of that kind; as well as many other observations of the same nature.

Nor

Nor is this the only great collection of ſcience and literature at preſent carrying on in that country, to merit the attention of foreign nations. The deſcription of the cabinet of the King, which promiſes to comprehend a compleat ſyſtem of natural hiſtory, is a work almoſt equally extenſive. It was begun by the command of a miniſter whom France has long deſired to ſee reſtored to the direction of the marine, and all Europe to that of the ſciences, the Count de Maurepas. It is executed by two Gentlemen of moſt univerſally acknowledged merit, Mr. Buffon, and Mr. Daubenton. A ſmall part only of this work is yet publiſhed. The reaſoning and philoſophical part concerning the formation of plants, the generation of animals, the formation of the fœtus, the developement of the ſenſes, &c. is by Mr. Buffon. The ſyſtem indeed of this Gentleman, it may be thought, is almoſt entirely hypothetical; and with regard to the cauſes of generation ſuch, that it is ſcarce poſſible to form any very determinate idea of it. It muſt be acknowledged, however, that it is explained in an agreeable, copious, and natural eloquence, and that he has ſupported or connected it with many ſingular and curious obſervations and experiments of his own. The neatneſs, diſtinctneſs and propriety of all Mr. Daubenton's deſcriptions, ſeem to leave no room for criticiſm upon his part, which, tho' the leaſt pompous, is by far the moſt important of the work.

None of the ſciences indeed ſeem to be cultivated in France with more eagerneſs than natural hiſtory. Perſpicuous deſcription and juſt arrangement conſtitute a great part of the merit of a natural hiſtorian; and this ſtudy is perhaps upon that account peculiarly ſuited to the genius of that nation. In Mr. Reaumur's hiſtory of inſects, a work of which we are ſtill to expect ſome volumes, your readers will find both theſe in the higheſt perfection,

perfection, as well as the most attentive observation assisted by the most artful contrivances for inspecting into such things in the œconomy and management of those little animals, as one would have imagined it impossible that he ever should have discovered. Those who complain of his tediousness, have never entered regularly upon his work, but have contented themselves with dipping into some parts of it. As mean as the subject may appear, he never fails to carry our attention along with him, and we follow him thro' all his observations and experiments with the same innocent curiosity and simple-hearted pleasure with which he appears to have made them. It will surprise your readers to find, that this Gentleman, amidst many other laborious studies and occupations, while he was composing, from his own experiments too, many other curious and valuable works, could find time to fill eight volumes in quarto with his own observations upon this subject, without ever once having recourse to the vain parade of erudition and quotation. These, and all other such works as these, which either seem to add something to the public stock of observations, if I may say so, or which collect more compleatly, or arrange in a better order, the observations that have already been made, the public will be pleased to see pointed out to them in your periodical *Review*, and will listen with attention to your criticisms upon the defects and perfections of what so well deserves to be criticised in general. As the works of all the academies in the different parts of Europe, are the objects of a pretty universal curiosity, tho' it would be impossible for you to give an account of every thing that is contained in them; it will not be very difficult to point out what are the most considerable improvements and observations which those societies have communicated to the public

public during the ſix months which preceede the publication of every *Review*.

The original and inventive genius of the Engliſh has not only diſcovered itſelf in natural philoſophy, but in morals, metaphyſics, and part of the abſtract ſciences. Whatever attempts have been made in modern times towards improvement in this contentious and unproſperous philoſophy, beyond what the antients have left us, have been made in England. The Meditations of Des Cartes excepted, I know nothing in French that aims at being original upon theſe ſubjects; for the philoſophy of Mr. Regis, as well as that of Father Malbranche, are but refinements upon the Meditations of Des Cartes. But Mr. Hobbes, Mr. Lock, and Dr. Mandevil, Lord Shaftſbury, Dr. Butler, Dr. Clarke, and Mr. Hutcheſon, have all of them, according to their different and inconſiſtent ſyſtems, endeavoured at leaſt to be, in ſome meaſure, original; and to add ſomething to that ſtock of obſervations with which the world had been furniſhed before them. This branch of the Engliſh philoſophy, which ſeems now to be intirely neglected by the Engliſh themſelves, has of late been tranſported into France. I obſerve ſome traces of it, not only in the Encyclopedia, but in the Theory of agreeable ſentiments by Mr. De Pouilly, a work that is in many reſpects original; and above all, in the late Diſcourſe upon the origin and foundation of the inequality amongſt mankind by Mr. Rouſſeau of Geneva.

Whoever reads this laſt work with attention, will obſerve that the ſecond volume of the Fable of the Bees has given occaſion to the ſyſtem of Mr. Rouſſeau, in whom however the principles of the Engliſh author are ſoftened, improved, and embelliſhed, and ſtript of all that tendency to corruption and licentiouſneſs which has diſgraced them in their original author.

Dr. Man-

Dr. Mandeville repreſents the primitive ſtate of mankind as the moſt wretched and miſerable that can be imagined: Mr. Rouſſeau, on the contrary, paints it as the happieſt and moſt ſuitable to his nature. Both of them however ſuppoſe, that there is in man no powerful inſtinct which neceſſarily determines him to ſeek ſociety for its own ſake: but according to the one, the miſery of his original ſtate compelled him to have recourſe to this otherwiſe diſagreeable remedy; according to the other, ſome unfortunate accidents having given birth to the unnatural paſſions of ambition and the vain deſire of ſuperiority, to which he had before been a ſtranger, produced the ſame fatal effect. Both of them ſuppoſe the ſame ſlow progreſs and gradual development of all the talents, habits, and arts which fit men to live together in ſociety, and they both deſcribe this progreſs pretty much in the ſame manner. According to both, thoſe laws of juſtice, which maintain the preſent inequality amongſt mankind, were originally the inventions of the cunning and the powerful, in order to maintain or to acquire an unnatural and unjuſt ſuperiority over the reſt of their fellow-creatures. Mr. Rouſſeau however criticiſes upon Dr. Mandeville: he obſerves, that *pity*, the only amiable principle which the Engliſh author allows to be natural to man, is capable of producing all thoſe virtues, whoſe reality Dr. Mandeville denies. Mr. Rouſſeau at the ſame time ſeems to think, that this principle is in itſelf no virtue, but that it is poſſeſſed by ſavages and by the moſt profligate of the vulgar, in a greater degree of perfection than by thoſe of the moſt poliſhed and cultivated manners; in which he perfectly agrees with the Engliſh author.

The life of a ſavage, when we take a diſtant view of it, ſeems to be a life either of profound indolence, or of great and aſtoniſhing adventures; and both theſe qualities

lities ſerve to render the deſcription of it agreeable to the imagination. The paſſion of all young people for paſtoral poetry, which deſcribes the amuſements of the indolent life of a ſhepherd; and for books of chivalry and romance, which deſcribe the moſt dangerous and extravagant adventures, is the effect of this natural taſte for theſe two ſeemingly inconſiſtent objects. In the deſcriptions of the manners of ſavages, we expect to meet with both theſe: and no author ever propoſed to treat of this ſubject who did not excite the public curioſity. Mr. Rouſſeau, intending to paint the ſavage life as the happieſt of any, preſents only the indolent ſide of it to view, which he exhibits indeed with the moſt beautiful and agreeable colours, in a ſtyle, which, tho' laboured and ſtudiouſly elegant, is every where ſufficiently nervous, and ſometimes even ſublime and pathetic. It is by the help of this ſtyle, together with a little philoſophical chemiſtry, that the principles and ideas of the profligate Mandeville ſeem in him to have all the purity and ſublimity of the morals of Plato, and to be only the true ſpirit of a republican carried a little too far. His work is divided into two parts: in the firſt, he deſcribes the ſolitary ſtate of mankind; in the ſecond, the firſt beginnings and gradual progreſs of ſociety. It would be to no purpoſe to give an analyſis of either; for none could give any juſt idea of a work which conſiſts almoſt entirely of rhetoric and deſcription. I ſhall endeavour to preſent your readers therefore with a ſpecimen of his eloquence, by tranſlating one or two ſhort paſſages.

"While men," ſays he, *p.* 117. "contented themſelves with their firſt ruſtic habitations; while their induſtry had no object, except to pin together the ſkins of wild beaſts for their original cloathing, to adorn themſelves with feathers and ſhells, to paint

"their

" their bodies with different colours, to perfect or em-
" bellish their bows and arrows, to cut out with sharp
" stones some fishing canoes or some rude instruments
" of music; while they applied themselves to such
" works as a single person could execute, and to such
" arts as required not the concurrence of several hands;
" they lived free, healthful, humane and happy, as far
" as their nature would permit them, and continued to
" enjoy amongst themselves the sweets of an indepen-
" dent society. But from the instant in which one man
" had occasion for the assistance of another, from the
" moment that he perceived that it could be advan-
" tageous to a single person to have provisions for two,
" equality disappeared, property was introduced,
" labour became necessary, and the vast forests of
" nature were changed into agreeable plains, which
" must be watered with the sweat of mankind, and in
" which the world beheld slavery and wretchedness
" begin to grow up and blossom with the harvest."

" Thus, says he, *p.* 126. are all our faculties unfolded,
" memory and imagination brought into play, self-love
" interested, reason rendered active, and the under-
" standing advanced almost to the term of its perfec-
" tion. Thus are all our natural qualities exerted, the
" rank and condition of every man established, not only
" upon the greatness of his fortune and his power to
" serve or to hurt, but upon his genius, his beauty, his
" strength, or his address, upon his merit or his talents;
" and those qualities being alone capable of attracting
" consideration, he must either have them or affect
" them: he must for his advantage show himself to be
" one thing, while in reality he is another. To be and
" to ap[illegible] to be, became two things entirely different;
" [illegible]n th[illegible] distinction arose imposing ostentation,
[illegible] all the vices which attend them.

" Thus

" Thus man, from being free and independent, became
" by a multitude of new neceſſities ſubjected in a man-
" ner, to all nature, and above all to his fellow crea-
" tures, whoſe ſlave he is in one ſenſe even while he
" becomes their maſter; rich, he has occaſion for their
" ſervices; poor, he ſtands in need of their aſſiſtance;
" and even mediocrity does not enable him to live
" without them. He is obliged therefore to endeavour
" to intereſt them in his ſituation, and to make them
" find, either in reality or in appearance, their advan-
" tage in labouring for his. It is this which renders
" him falſe and artificial with ſome, imperious and un-
" feeling with others, and lays him under a neceſſity of
" deceiving all thoſe for whom he has occaſion, when
" he cannot terrify them, and does not find it for his
" intereſt to ſerve them in reality. To conclude, an
" inſatiable ambition, an ardour to raiſe his relative
" fortune, not ſo much from any real neceſſity, as to
" ſet himſelf above others, inſpires all men with a dire-
" ful propenſity to hurt one another; with a ſecret
" jealouſy, ſo much the more dangerous, as to ſtrike its
" blow more ſurely, it often aſſumes the maſk of good
" will; in ſhort, with concurrence and rivalſhip on
" one ſide; on the other, with oppoſition of intereſt;
" and always with the concealed deſire of making profit
" at the expence of ſome other perſon: All theſe evils
" are the firſt effects of property, and the inſeparable
" attendants of beginning inequality.

" Man," ſays he afterwards, *p.* 179. " in his ſavage,
" and man in his civilized ſtate, differ ſo eſſentially in
" their paſſions and inclinations, that what makes the
" ſupreme happineſs of the one, would reduce the other
" to deſpair. The ſavage breathes nothing but liberty
" and repoſe; he deſires only to live and to be at
" leiſure; and the *ataraxia* of the Stoic does not ap-
" proach

" proach to his profound indifference for every other
" object. The citizen, on the contrary, toils, beſtirs
" and torments himſelf without end, to obtain employ-
" ments which are ſtill more laborious; he labours on
" till his death, he even haſtens it, in order to put
" himſelf in a condition to live, or renounces life to
" acquire immortality. He makes his court to the great
" whom he hates, and to the rich whom he deſpiſes;
" he ſpares nothing to obtain the honour of ſerving
" them; he vainly boaſts of his own meanneſs and their
" protection, and proud of his ſlavery, ſpeaks with diſ-
" dain of thoſe who have not the honour to ſhare it.
" What a ſpectacle to a *Caraib* would be the painful
" and envied labours of a European miniſter of ſtate?
" how many cruel deaths would not that indolent
" ſavage prefer to the horror of ſuch a life, which is
" often not even ſweetened by the pleaſure of doing
" well? but to ſee the end of ſo many cares, it is
" neceſſary that the words, *power* and *reputation*, ſhould
" have an intelligible meaning in his underſtanding;
" that he ſhould be made to comprehend that there is a
" ſpecies of men who count for ſomething the looks
" of the reſt of the univerſe; who can be happy and
" contented with themſelves upon the teſtimony of
" another, rather than upon their own. For ſuch in
" reality is the true cauſe of all thoſe differences: the
" ſavage lives in himſelf; the man of ſociety, always
" out of himſelf; cannot live but in the opinion of
" others, and it is, if I may ſay ſo, from their judgment
" alone that he derives the ſentiment of his own exiſt-
" ence. It belongs not to my ſubject to ſhow, how
" from ſuch a diſpoſition ariſes ſo much real indiffe-
" rence for good and evil, with ſo many fine diſcourſes
" of morality; how every thing being reduced to ap-
" pearances, every thing becomes factitious and acted;

 " honour,

« honour, friendſhip, virtue, and often even vice itſelf,
« of which we have at laſt found out the ſecret of
« being vain ; how in one word always demanding of
« others what we are, and never daring to aſk ourſelves
« the queſtion, in the midſt of ſo much philoſophy, ſo
« much humanity, ſo much politeneſs, and ſo many
« ſublime maxims, we have nothing but a deceitful and
« frivolous exterior ; honour without virtue, reaſon
« without wiſdom, and pleaſure without happineſs."

I ſhall only add, that the dedication to the republic of Geneva, of which Mr. Rouſſeau has the honour of being a citizen, is an agreeable, animated, and I believe too, a juſt panegyric ; and expreſſes that ardent and paſſionate eſteem which it becomes a good citizen to entertain for the government of his country and the character of his countrymen.

It is not my intention, you may believe, to confine you to an account of the philoſophical works that are publiſhed either at home or abroad. Tho' the poets of the preſent age ſeem in general to be inferior to thoſe of the laſt, there are not however wanting, in England, France, and even in Italy, ſeveral who repreſent not unworthily their more renowned predeceſſors. The works of Metaſtaſio are eſteemed all over Europe ; and Mr. Voltaire, the moſt univerſal genius perhaps which France has ever produced, is acknowledged to be, in almoſt every ſpecies of writing, nearly upon a level with the greateſt authors of the laſt age, who applied themſelves chiefly to one. The original and inventive genius of that Gentleman never appeared more conſpicuous than in his laſt tragedy, the Orphan of China. It is both agreeable and ſurpriſing to obſerve how the atrocity, if I may ſay ſo, of Chineſe virtue, and the rudeneſs of Tartar barbarity, have been introduced upon the French ſtage, without violating thoſe nice

decorums of which that nation are ſuch delicate and ſcrupulous judges. In a letter to Mr. Rouſſeau of Geneva, he denies that the hiſtory of the laſt war, which has been publiſhed under his name in Holland, is to be regarded as his in the ſtate in which it has been printed. There are indeed in it a great number of very groſs miſrepreſentations with regard to the ſhare which Great Britain had in the laſt war, for which, Mr. Voltaire, as it was publiſhed without his conſent, is not anſwerable, and which will certainly be corrected in the firſt genuine edition that is publiſhed with the conſent of the author.

I am,

Your moſt humble Servant, &c.

THE END.

Strahan and Preſton,
Printers-Street, London.